

SEQUENCE LISTING

<110> Bertelli, Francois
Brown, Jason P
Dissanayake, Visaka
Suman-Chauhan, Nirmala
Gee, Nicolas S

<120> Method for the Screening of Alpha2Delta-1 Subunit
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<130> PCT National Phase in US

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<170> PatentIn Ver. 2.1

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	690					695					700				
Met	Glu	Lys	Val	Thr	Pro	Asp	Ser	Lys	Gln	Cys	Asn	Asn	Phe	Leu	Leu
705					710					715					720
His	Asn	Leu	Ile	Leu	Asp	Thr	Gly	Ile	Thr	Gln	Gln	Leu	Val	Glu	Arg
				725					730					735	
Val	Trp	Arg	Asp	Gln	Asp	Leu	Asn	Thr	Tyr	Ser	Leu	Leu	Ala	Val	Phe
			740					745					750		
Ala	Ala	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Phe	Pro	Asn	Lys	Ala	Ala
		755					760					765			
Glu	Asp	Trp	Thr	Glu	Asn	Pro	Glu	Pro	Phe	Asn	Ala	Ser	Phe	Tyr	Arg
	770					775					780				
Arg	Ser	Leu	Asp	Asn	His	Gly	Tyr	Val	Phe	Lys	Pro	Pro	His	Gln	Asp
785					790					795					800
Ala	Leu	Leu	Arg	Pro	Leu	Glu	Leu	Glu	Asn	Asp	Thr	Val	Gly	Ile	Leu
				805					810				815		
Val	Ser	Thr	Ala	Val	Glu	Leu	Ser	Leu	Gly	Arg	Arg	Thr	Leu	Arg	Pro
			820					825					830		
Ala	Val	Val	Gly	Val	Lys	Leu	Asp	Leu	Glu	Ala	Trp	Ala	Glu	Lys	Phe
		835					840					845			
Lys	Val	Leu	Ala	Ser	Asn	Arg	Thr	His	Gln	Asp	Gln	Pro	Gln	Lys	Cys
	850					855					860				
Gly	Pro	Asn	Ser	His	Cys	Glu	Met	Asp	Cys	Glu	Val	Asn	Asn	Glu	Asp

865		870		875		880
Leu Leu Cys Val	Leu Ile Asp Asp Gly Gly Phe Leu Val	Leu Ser Asn				
	885		890			895
Gln Asn His Gln Trp Asp Gln Val Gly Arg Phe Phe Ser Glu Val Asp						
	900		905			910
Ala Asn Leu Met Leu Ala Leu Tyr Asn Asn Ser Phe Tyr Thr Arg Lys						
	915		920			925
Glu Ser Tyr Asp Tyr Gln Ala Ala Cys Ala Pro Gln Pro Pro Gly Asn						
	930		935			940
Leu Gly Ala Ala Pro Arg Gly Val Phe Val Pro Thr Val Ala Asp Phe						
	945		950			955
Leu Asn Leu Ala Trp Trp Thr Ser Ala Ala Ala Trp Ser Leu Phe Gln						
		965		970		975
Gln Leu Leu Tyr Gly Leu Ile Tyr His Ser Trp Phe Gln Ala Asp Pro						
	980		985			990
Ala Glu Ala Glu Gly Ser Pro Glu Thr Arg Glu Ser Ser Cys Val Met						
	995		1000			1005
Lys Gln Thr Gln Tyr Tyr Phe Gly Ser Val Asn Ala Ser Tyr Asn Ala						
	1010		1015			1020
Ile Ile Asp Cys Gly Asn Cys Ser Arg Leu Phe His Ala Gln Arg Leu						
	1025		1030			1035
Thr Asn Thr Asn Leu Leu Phe Val Val Ala Glu Lys Pro Leu Cys Ser						
		1045		1050		1055
Gln Cys Glu Ala Gly Arg						
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<211> 1082

<212> PRT

<213> Homo sapiens

<400> 5

Met Ala Val Pro Ala Arg Thr Cys Gly Ala Ser Arg Pro Gly Pro Ala
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Arg	Thr	Ala	Arg	Pro	Trp	Pro	Gly	Cys	Gly	Pro	His	Pro	Gly	Pro	Gly			
			20					25					30					
Thr	Arg	Arg	Pro	Thr	Ser	Gly	Pro	Pro	Arg	Pro	Leu	Trp	Leu	Leu	Leu			
			35				40					45						
Pro	Leu	Leu	Pro	Leu	Leu	Ala	Ala	Pro	Gly	Ala	Ser	Ala	Tyr	Ser	Phe			
			50				55				60							
Pro	Gln	Gln	His	Thr	Met	Gln	His	Trp	Ala	Arg	Arg	Leu	Glu	Gln	Glu			
					70					75					80			
Val	Asp	Gly	Val	Met	Arg	Ile	Phe	Gly	Gly	Val	Gln	Gln	Leu	Arg	Glu			
				85					90						95			
Ile	Tyr	Lys	Asp	Asn	Arg	Asn	Leu	Phe	Glu	Val	Gln	Glu	Asn	Glu	Pro			
			100					105					110					
Gln	Lys	Leu	Val	Glu	Lys	Val	Ala	Gly	Asp	Ile	Glu	Ser	Leu	Leu	Asp			
			115				120					125						
Arg	Lys	Val	Gln	Ala	Leu	Lys	Arg	Leu	Ala	Asp	Ala	Ala	Glu	Asn	Phe			
			130				135				140							
Gln	Lys	Ala	His	Arg	Trp	Gln	Asp	Asn	Ile	Lys	Glu	Glu	Asp	Ile	Val			
					150					155					160			
Tyr	Tyr	Asp	Ala	Lys	Ala	Asp	Ala	Glu	Leu	Asp	Asp	Pro	Glu	Ser	Glu			
				165					170					175				
Asp	Val	Glu	Arg	Gly	Ser	Lys	Ala	Ser	Thr	Leu	Arg	Leu	Asp	Phe	Ile			
			180					185					190					
Glu	Asp	Pro	Asn	Phe	Lys	Asn	Lys	Val	Asn	Tyr	Ser	Tyr	Ala	Ala	Val			
			195				200					205						
Gln	Ile	Pro	Thr	Asp	Ile	Tyr	Lys	Gly	Ser	Thr	Val	Ile	Leu	Asn	Glu			
			210				215				220							
Leu	Asn	Trp	Thr	Glu	Ala	Leu	Glu	Asn	Val	Phe	Met	Glu	Asn	Arg	Arg			
					230					235					240			
Gln	Asp	Pro	Thr	Leu	Leu	Trp	Gln	Val	Phe	Gly	Ser	Ala	Thr	Gly	Val			
				245					250					255				
Thr	Arg	Tyr	Tyr	Pro	Ala	Thr	Pro	Trp	Arg	Ala	Pro	Lys	Lys	Ile	Asp			
				260				265					270					

Leu	Tyr	Asp	Val	Arg	Arg	Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ser	Ser		
		275						280					285				
Pro	Lys	Asp	Met	Val	Ile	Ile	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly		
		290						295				300					
Leu	Thr	Leu	Lys	Leu	Met	Lys	Thr	Ser	Val	Cys	Glu	Met	Leu	Asp	Thr		
		305				310					315				320		
Leu	Ser	Asp	Asp	Asp	Tyr	Val	Asn	Val	Ala	Ser	Phe	Asn	Glu	Lys	Ala		
				325					330						335		
Gln	Pro	Val	Ser	Cys	Phe	Thr	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn		
			340						345					350			
Lys	Lys	Val	Phe	Lys	Glu	Ala	Val	Gln	Gly	Met	Val	Ala	Lys	Gly	Thr		
		355						360				365					
Thr	Gly	Tyr	Lys	Ala	Gly	Phe	Glu	Tyr	Ala	Phe	Asp	Gln	Leu	Gln	Asn		
		370					375					380					
Ser	Asn	Ile	Thr	Arg	Ala	Asn	Cys	Asn	Lys	Met	Ile	Met	Met	Phe	Thr		
		385				390				395					400		
Asp	Gly	Gly	Glu	Asp	Arg	Val	Gln	Asp	Val	Phe	Glu	Lys	Tyr	Asn	Trp		
				405					410						415		
Pro	Asn	Arg	Thr	Val	Arg	Val	Phe	Thr	Phe	Ser	Val	Gly	Gln	His	Asn		
			420						425					430			
Tyr	Asp	Val	Thr	Pro	Leu	Gln	Trp	Met	Ala	Cys	Ala	Asn	Lys	Gly	Tyr		
		435						440					445				
Tyr	Phe	Glu	Ile	Pro	Ser	Ile	Gly	Ala	Ile	Arg	Ile	Asn	Thr	Gln	Glu		
		450					455					460					
Tyr	Leu	Asp	Val	Leu	Gly	Arg	Pro	Met	Val	Leu	Ala	Gly	Lys	Glu	Ala		
		465				470				475					480		
Lys	Gln	Val	Gln	Trp	Thr	Asn	Val	Tyr	Glu	Asp	Ala	Leu	Gly	Leu	Gly		
				485						490					495		
Leu	Val	Val	Thr	Gly	Thr	Leu	Pro	Val	Phe	Asn	Leu	Thr	Gln	Asp	Gly		
			500					505						510			
Pro	Gly	Glu	Lys	Lys	Asn	Gln	Leu	Ile	Leu	Gly	Val	Met	Gly	Ile	Asp		
		515					520					525					

Val	Ala	Leu	Asn	Asp	Ile	Lys	Arg	Leu	Thr	Pro	Asn	Tyr	Thr	Leu	Gly	530	535	540	
Ala	Asn	Gly	Tyr	Val	Phe	Ala	Ile	Asp	Leu	Asn	Gly	Tyr	Val	Leu	Leu	545	550	555	560
His	Pro	Asn	Leu	Lys	Pro	Gln	Thr	Thr	Asn	Phe	Arg	Glu	Pro	Val	Thr	565	570	575	
Leu	Asp	Phe	Leu	Asp	Ala	Glu	Leu	Glu	Asp	Glu	Asn	Lys	Glu	Glu	Ile	580	585	590	
Arg	Arg	Ser	Met	Ile	Asp	Gly	Asn	Lys	Gly	His	Lys	Gln	Ile	Arg	Thr	595	600	605	
Leu	Val	Lys	Ser	Leu	Asp	Glu	Arg	Tyr	Ile	Asp	Glu	Val	Thr	Arg	Asn	610	615	620	
Tyr	Thr	Trp	Val	Pro	Ile	Arg	Ser	Thr	Asn	Tyr	Ser	Leu	Gly	Leu	Val	625	630	635	640
Leu	Pro	Pro	Tyr	Ser	Thr	Phe	Tyr	Leu	Gln	Ala	Asn	Leu	Ser	Asp	Gln	645	650	655	
Ile	Leu	Gln	Val	Lys	Tyr	Phe	Glu	Phe	Leu	Leu	Pro	Ser	Ser	Phe	Glu	660	665	670	
Ser	Glu	Gly	His	Val	Phe	Ile	Ala	Pro	Arg	Glu	Tyr	Cys	Lys	Asp	Leu	675	680	685	
Asn	Ala	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Lys	Asn	Phe	Ile	Glu	Leu	690	695	700	
Met	Glu	Lys	Val	Thr	Pro	Asp	Ser	Lys	Gln	Cys	Asn	Asn	Phe	Leu	Leu	705	710	715	720
His	Asn	Leu	Ile	Leu	Asp	Thr	Gly	Ile	Thr	Gln	Gln	Leu	Val	Glu	Arg	725	730	735	
Val	Trp	Arg	Asp	Gln	Asp	Leu	Asn	Thr	Tyr	Ser	Leu	Leu	Ala	Val	Phe	740	745	750	
Ala	Ala	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Phe	Pro	Asn	Lys	Ala	Ala	755	760	765	
Glu	Asp	Trp	Thr	Glu	Asn	Pro	Glu	Pro	Phe	Asn	Ala	Ser	Phe	Tyr	Arg	770	775	780	

Arg	Ser	Leu	Asp	Asn	His	Gly	Tyr	Val	Phe	Lys	Pro	Pro	His	Gln	Asp	
785					790					795					800	
Ala	Leu	Leu	Arg	Pro	Leu	Glu	Leu	Glu	Asn	Asp	Thr	Val	Gly	Ile	Leu	
				805					810					815		
Val	Ser	Thr	Ala	Val	Glu	Leu	Ser	Leu	Gly	Arg	Arg	Thr	Leu	Arg	Pro	
			820					825					830			
Ala	Val	Val	Gly	Val	Lys	Leu	Asp	Leu	Glu	Ala	Trp	Ala	Glu	Lys	Phe	
		835					840					845				
Lys	Val	Leu	Ala	Ser	Asn	Arg	Thr	His	Gln	Asp	Gln	Pro	Gln	Lys	Cys	
	850					855					860					
Gly	Pro	Asn	Ser	His	Cys	Glu	Met	Asp	Cys	Glu	Val	Asn	Asn	Glu	Asp	
865					870					875					880	
Leu	Leu	Cys	Val	Leu	Ile	Asp	Asp	Gly	Gly	Phe	Leu	Val	Leu	Ser	Asn	
				885					890					895		
Gln	Asn	His	Gln	Trp	Asp	Gln	Val	Gly	Arg	Phe	Phe	Ser	Glu	Val	Asp	
			900					905					910			
Ala	Asn	Leu	Met	Leu	Ala	Leu	Tyr	Asn	Asn	Ser	Phe	Tyr	Thr	Arg	Lys	
		915					920					925				
Glu	Ser	Tyr	Asp	Tyr	Gln	Ala	Ala	Cys	Ala	Pro	Gln	Pro	Pro	Gly	Asn	
	930					935					940					
Leu	Gly	Ala	Ala	Pro	Arg	Gly	Val	Phe	Val	Pro	Thr	Val	Ala	Asp	Phe	
945					950					955					960	
Leu	Asn	Leu	Ala	Trp	Trp	Thr	Ser	Ala	Ala	Ala	Trp	Ser	Leu	Phe	Gln	
				965					970					975		
Gln	Leu	Leu	Tyr	Gly	Leu	Ile	Tyr	His	Ser	Trp	Phe	Gln	Ala	Asp	Pro	
			980					985					990			
Ala	Glu	Ala	Glu	Gly	Ser	Pro	Glu	Thr	Arg	Glu	Ser	Ser	Cys	Val	Met	
		995					1000					1005				
Lys	Gln	Thr	Gln	Tyr	Tyr	Phe	Gly	Ser	Val	Asn	Ala	Ser	Tyr	Asn	Ala	
	1010					1015					1020					
Ile	Ile	Asp	Cys	Gly	Asn	Cys	Ser	Arg	Leu	Phe	His	Ala	Gln	Arg	Leu	
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Thr Asn Thr Asn Leu Leu Phe Val Val Ala Glu Lys Pro Leu Cys Ser
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Gln Cys Glu Ala Gly Arg Leu Leu Gln Lys Glu Thr His Cys Pro Ala
1060 1065 1070

Asp Gly Pro Glu Gln Cys Glu Leu Val Gln
1075 1080

<210> 6

<211> 1109

<212> PRT

<213> Homo sapiens

<400> 6

Met Ala Val Pro Ala Arg Thr Cys Gly Ala Ser Arg Pro Gly Pro Ala
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Arg Thr Ala Arg Pro Trp Pro Gly Cys Gly Pro His Pro Gly Pro Gly
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Thr Arg Arg Pro Thr Ser Gly Pro Pro Arg Pro Leu Trp Leu Leu Leu
35 40 45

Pro Leu Leu Pro Leu Leu Ala Ala Pro Gly Ala Ser Ala Tyr Ser Phe
50 55 60

Pro Gln Gln His Thr Met Gln His Trp Ala Arg Arg Leu Glu Gln Glu
65 70 75 80

Val Asp Gly Val Met Arg Ile Phe Gly Gly Val Gln Gln Leu Arg Glu
85 90 95

Ile Tyr Lys Asp Asn Arg Asn Leu Phe Glu Val Gln Glu Asn Glu Pro
100 105 110

Gln Lys Leu Val Glu Lys Val Ala Gly Asp Ile Glu Ser Leu Leu Asp
115 120 125

Arg Lys Val Gln Ala Leu Lys Arg Leu Ala Asp Ala Ala Glu Asn Phe
130 135 140

Gln Lys Ala His Arg Trp Gln Asp Asn Ile Lys Glu Glu Asp Ile Val
145 150 155 160

Tyr Tyr Asp Ala Lys Ala Asp Ala Glu Leu Asp Asp Pro Glu Ser Glu
165 170 175

Asp	Val	Glu	Arg	Gly	Ser	Lys	Ala	Ser	Thr	Leu	Arg	Leu	Asp	Phe	Ile	180	185	190
Glu	Asp	Pro	Asn	Phe	Lys	Asn	Lys	Val	Asn	Tyr	Ser	Tyr	Ala	Ala	Val	195	200	205
Gln	Ile	Pro	Thr	Asp	Ile	Tyr	Lys	Gly	Ser	Thr	Val	Ile	Leu	Asn	Glu	210	215	220
Leu	Asn	Trp	Thr	Glu	Ala	Leu	Glu	Asn	Val	Phe	Met	Glu	Asn	Arg	Arg	225	230	235
Gln	Asp	Pro	Thr	Leu	Leu	Trp	Gln	Val	Phe	Gly	Ser	Ala	Thr	Gly	Val	245	250	255
Thr	Arg	Tyr	Tyr	Pro	Ala	Thr	Pro	Trp	Arg	Ala	Pro	Lys	Lys	Ile	Asp	260	265	270
Leu	Tyr	Asp	Val	Arg	Arg	Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ser	Ser	275	280	285
Pro	Lys	Asp	Met	Val	Ile	Ile	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	290	295	300
Leu	Thr	Leu	Lys	Leu	Met	Lys	Thr	Ser	Val	Cys	Glu	Met	Leu	Asp	Thr	305	310	315
Leu	Ser	Asp	Asp	Asp	Tyr	Val	Asn	Val	Ala	Ser	Phe	Asn	Glu	Lys	Ala	325	330	335
Gln	Pro	Val	Ser	Cys	Phe	Thr	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	340	345	350
Lys	Lys	Val	Phe	Lys	Glu	Ala	Val	Gln	Gly	Met	Val	Ala	Lys	Gly	Thr	355	360	365
Thr	Gly	Tyr	Lys	Ala	Gly	Phe	Glu	Tyr	Ala	Phe	Asp	Gln	Leu	Gln	Asn	370	375	380
Ser	Asn	Ile	Thr	Arg	Ala	Asn	Cys	Asn	Lys	Met	Ile	Met	Met	Phe	Thr	385	390	395
Asp	Gly	Gly	Glu	Asp	Arg	Val	Gln	Asp	Val	Phe	Glu	Lys	Tyr	Asn	Trp	405	410	415
Pro	Asn	Arg	Thr	Val	Arg	Val	Phe	Thr	Phe	Ser	Val	Gly	Gln	His	Asn	420	425	430

Tyr Asp Val Thr Pro Leu Gln Trp Met Ala Cys Ala Asn Lys Gly Tyr
 435 440 445

Tyr Phe Glu Ile Pro Ser Ile Gly Ala Ile Arg Ile Asn Thr Gln Glu
 450 455 460

Tyr Leu Asp Val Leu Gly Arg Pro Met Val Leu Ala Gly Lys Glu Ala
 465 470 475 480

Lys Gln Val Gln Trp Thr Asn Val Tyr Glu Asp Ala Leu Gly Leu Gly
 485 490 495

Leu Val Val Thr Gly Thr Leu Pro Val Phe Asn Leu Thr Gln Asp Gly
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Pro Gly Glu Lys Lys Asn Gln Leu Ile Leu Gly Val Met Gly Ile Asp
 515 520 525

Val Ala Leu Asn Asp Ile Lys Arg Leu Thr Pro Asn Tyr Thr Leu Gly
 530 535 540

Ala Asn Gly Tyr Val Phe Ala Ile Asp Leu Asn Gly Tyr Val Leu Leu
 545 550 555 560

His Pro Asn Leu Lys Pro Gln Thr Thr Asn Phe Arg Glu Pro Val Thr
 565 570 575

Leu Asp Phe Leu Asp Ala Glu Leu Glu Asp Glu Asn Lys Glu Glu Ile
 580 585 590

Arg Arg Ser Met Ile Asp Gly Asn Lys Gly His Lys Gln Ile Arg Thr
 595 600 605

Leu Val Lys Ser Leu Asp Glu Arg Tyr Ile Asp Glu Val Thr Arg Asn
 610 615 620

Tyr Thr Trp Val Pro Ile Arg Ser Thr Asn Tyr Ser Leu Gly Leu Val
 625 630 635 640

Leu Pro Pro Tyr Ser Thr Phe Tyr Leu Gln Ala Asn Leu Ser Asp Gln
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Ile Leu Gln Val Lys Tyr Phe Glu Phe Leu Leu Pro Ser Ser Phe Glu
 660 665 670

Ser Glu Gly His Val Phe Ile Ala Pro Arg Glu Tyr Cys Lys Asp Leu
 675 680 685

Asn Ala Ser Asp Asn Asn Thr Glu Phe Leu Lys Asn Phe Ile Glu Leu
 690 695 700

Met Glu Lys Val Thr Pro Asp Ser Lys Gln Cys Asn Asn Phe Leu Leu
 705 710 715 720

His Asn Leu Ile Leu Asp Thr Gly Ile Thr Gln Gln Leu Val Glu Arg
 725 730 735

Val Trp Arg Asp Gln Asp Leu Asn Thr Tyr Ser Leu Leu Ala Val Phe
 740 745 750

Ala Ala Thr Asp Gly Gly Ile Thr Arg Val Phe Pro Asn Lys Ala Ala
 755 760 765

Glu Asp Trp Thr Glu Asn Pro Glu Pro Phe Asn Ala Ser Phe Tyr Arg
 770 775 780

Arg Ser Leu Asp Asn His Gly Tyr Val Phe Lys Pro Pro His Gln Asp
 785 790 795 800

Ala Leu Leu Arg Pro Leu Glu Leu Glu Asn Asp Thr Val Gly Ile Leu
 805 810 815

Val Ser Thr Ala Val Glu Leu Ser Leu Gly Arg Arg Thr Leu Arg Pro
 820 825 830

Ala Val Val Gly Val Lys Leu Asp Leu Glu Ala Trp Ala Glu Lys Phe
 835 840 845

Lys Val Leu Ala Ser Asn Arg Thr His Gln Asp Gln Pro Gln Lys Cys
 850 855 860

Gly Pro Asn Ser His Cys Glu Met Asp Cys Glu Val Asn Asn Glu Asp
 865 870 875 880

Leu Leu Cys Val Leu Ile Asp Asp Gly Gly Phe Leu Val Leu Ser Asn
 885 890 895

Gln Asn His Gln Trp Asp Gln Val Gly Arg Phe Phe Ser Glu Val Asp
 900 905 910

Ala Asn Leu Met Leu Ala Leu Tyr Asn Asn Ser Phe Tyr Thr Arg Lys
 915 920 925

Glu Ser Tyr Asp Tyr Gln Ala Ala Cys Ala Pro Gln Pro Pro Gly Asn
 930 935 940

Leu Gly Ala Ala Pro Arg Gly Val Phe Val Pro Thr Val Ala Asp Phe
 945 950 955 960

Leu Asn Leu Ala Trp Trp Thr Ser Ala Ala Ala Trp Ser Leu Phe Gln
 965 970 975

Gln Leu Leu Tyr Gly Leu Ile Tyr His Ser Trp Phe Gln Ala Asp Pro
 980 985 990

Ala Glu Ala Glu Gly Ser Pro Glu Thr Arg Glu Ser Ser Cys Val Met
 995 1000 1005

Lys Gln Thr Gln Tyr Tyr Phe Gly Ser Val Asn Ala Ser Tyr Asn Ala
 1010 1015 1020

Ile Ile Asp Cys Gly Asn Cys Ser Arg Leu Phe His Ala Gln Arg Leu
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Thr Asn Thr Asn Leu Leu Phe Val Val Ala Glu Lys Pro Leu Cys Ser
 1045 1050 1055

Gln Cys Glu Ala Gly Arg Leu Leu Gln Lys Glu Thr His Cys Pro Ala
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Asp Gly Pro Glu Gln Cys Glu Leu Val Gln Arg Pro Arg Tyr Arg Arg
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Gly Pro His Ile Cys Phe Asp Tyr Asn Ala Thr Glu Asp Thr Ser Asp
 1090 1095 1100

Cys Gly Arg Gly Ala
 1105

<210> 7

<211> 3057

<212> DNA

<213> Homo sapiens

<400> 7

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<212> PRT

<213> Homo sapiens

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Phe Gly Gly Glu Ile Lys Ser Ile Ala Ala Lys Tyr Ser Gly Ser Gln
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Ala Glu Glu Ala His Leu Lys His Glu Phe Asp Ala Asp Leu Gln Tyr
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Glu Tyr Phe Asn Ala Val Leu Ile Asn Glu Arg Asp Lys Asp Gly Asn
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Phe Leu Glu Leu Gly Lys Glu Phe Ile Leu Ala Pro Asn Asp His Phe
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Asn Met Tyr Asn Lys Asp Pro Ala Ile Val Asn Gly Val Tyr Trp Ser
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Glu Ser Leu Asn Lys Val Phe Val Asp Asn Phe Asp Arg Asp Pro Ser
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Pro Gly Ile Lys Trp Glu Pro Asp Glu Asn Gly Val Ile Ala Phe Asp
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Cys Arg Asn Arg Lys Trp Tyr Ile Gln Ala Ala Thr Ser Pro Lys Asp
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Thr Ile Ala Lys Gln Thr Val Ser Ser Ile Leu Asp Thr Leu Gly Asp
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Glu His Phe Arg Glu His Leu Asp Lys Leu Phe Ala Lys Gly Ile Gly
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Met Leu Asp Ile Ala Leu Asn Glu Ala Phe Asn Ile Leu Ser Asp Phe
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Phe	Phe	Thr	Gln	Ile	Ser	Thr	Leu	Ala	Asp	Val	Gln	Glu	Asn	Val	Met		
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Glu Gln Ile Pro Gly Ser Phe Val Tyr Ser Ile Pro Phe Ser Thr Gly
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Phe Gly Gly Glu Ile Lys Ser Ile Ala Ala Lys Tyr Ser Gly Ser Gln
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				245					250					255		
Val	Val	Ile	Leu	Val	Asp	Val	Ser	Gly	Ser	Met	Lys	Gly	Leu	Arg	Leu	
			260					265					270			
Thr	Ile	Ala	Lys	Gln	Thr	Val	Ser	Ser	Ile	Leu	Asp	Thr	Leu	Gly	Asp	
		275					280					285				
Asp	Asp	Phe	Phe	Asn	Ile	Ile	Ala	Tyr	Asn	Glu	Glu	Leu	His	Tyr	Val	
	290					295					300					
Glu	Pro	Cys	Leu	Asn	Gly	Thr	Leu	Val	Gln	Ala	Asp	Arg	Thr	Asn	Lys	
305					310					315					320	

Glu	His	Phe	Arg	Glu	His	Leu	Asp	Lys	Leu	Phe	Ala	Lys	Gly	Ile	Gly	325	330	335	
Met	Leu	Asp	Ile	Ala	Leu	Asn	Glu	Ala	Phe	Asn	Ile	Leu	Ser	Asp	Phe	340	345	350	
Asn	His	Thr	Gly	Gln	Gly	Ser	Ile	Cys	Ser	Gln	Ala	Ile	Met	Leu	Ile	355	360	365	
Thr	Asp	Gly	Ala	Val	Asp	Thr	Tyr	Asp	Thr	Ile	Phe	Ala	Lys	Tyr	Asn	370	375	380	
Trp	Pro	Asp	Arg	Lys	Val	Arg	Ile	Phe	Thr	Tyr	Leu	Ile	Gly	Arg	Glu	385	390	395	400
Ala	Ala	Phe	Ala	Asp	Asn	Leu	Lys	Trp	Met	Ala	Cys	Ala	Asn	Lys	Gly	405	410	415	
Phe	Phe	Thr	Gln	Ile	Ser	Thr	Leu	Ala	Asp	Val	Gln	Glu	Asn	Val	Met	420	425	430	
Glu	Tyr	Leu	His	Val	Leu	Ser	Arg	Pro	Lys	Val	Ile	Asp	Gln	Glu	His	435	440	445	
Asp	Val	Val	Trp	Thr	Glu	Ala	Tyr	Ile	Asp	Ser	Thr	Leu	Thr	Asp	Asp	450	455	460	
Gln	Gly	Pro	Val	Leu	Met	Thr	Thr	Val	Ala	Met	Pro	Val	Phe	Ser	Lys	465	470	475	480
Gln	Asn	Glu	Thr	Arg	Ser	Lys	Gly	Ile	Leu	Leu	Gly	Val	Val	Gly	Thr	485	490	495	
Asp	Val	Pro	Val	Lys	Glu	Leu	Leu	Lys	Thr	Ile	Pro	Lys	Tyr	Lys	Leu	500	505	510	
Gly	Ile	His	Gly	Tyr	Ala	Phe	Ala	Ile	Thr	Asn	Asn	Gly	Tyr	Ile	Leu	515	520	525	
Thr	His	Pro	Glu	Leu	Arg	Leu	Leu	Tyr	Glu	Glu	Gly	Lys	Lys	Arg	Arg	530	535	540	
Lys	Pro	Asn	Tyr	Ser	Ser	Val	Asp	Leu	Ser	Glu	Val	Glu	Trp	Glu	Asp	545	550	555	560
Arg	Asp	Asp	Val	Leu	Arg	Asn	Ala	Met	Val	Asn	Arg	Lys	Thr	Gly	Lys	565	570	575	

Phe Ser Met Glu Val Lys Lys Thr Val Asp Lys Gly Lys Arg Val Leu
580 585 590
Val Met Thr Asn Asp Tyr Tyr Tyr Thr Asp Ile Lys Gly Thr Pro Phe
595 600 605
Ser Leu Gly Val Ala Leu Ser Arg Gly His Gly Lys Tyr Phe Phe Arg
610 615 620
Gly Asn Val Thr Ile Glu Glu Gly Leu His Asp Leu Glu His Pro Asp
625 630 635 640
Val Ser Leu Ala Asp Glu Trp Ser Tyr Cys Asn Thr Asp Leu His Pro
645 650 655
Glu His Arg His Leu Ser Gln Leu Glu Ala Ile Lys Leu Tyr Leu Lys
660 665 670
Gly Lys Glu Pro Leu Leu Gln Cys Asp Lys Glu Leu Ile Gln Glu Val
675 680 685
Leu Phe Asp Ala Val Val Ser Ala Pro Ile Glu Ala Tyr Trp Thr Ser
690 695 700
Leu Ala Leu Asn Lys Ser Glu Asn Ser Asp Lys Gly Val Glu Val Ala
705 710 715 720
Phe Leu Gly Thr Arg Thr Gly Leu Ser Arg Ile Asn Leu Phe Val Gly
725 730 735
Ala Glu Gln Leu Thr Asn Gln Asp Phe Leu Lys Ala Gly Asp Lys Glu
740 745 750
Asn Ile Phe Asn Ala Asp His Phe Pro Leu Trp Tyr Arg Arg Ala Ala
755 760 765
Glu Gln Ile Pro Gly Ser Phe Val Tyr Ser Ile Pro Phe Ser Thr Gly
770 775 780
Pro Val Asn Lys Ser Asn Val Val Thr Ala Ser Thr Ser Ile Gln Leu
785 790 795 800
Leu Asp Glu Arg Lys Ser Pro Val Val Ala Ala Val Gly Ile Gln Met
805 810 815
Lys Leu Glu Phe Phe Gln Arg Lys Phe Trp Thr Ala Ser Arg Gln Cys
820 825 830

Ala Ser Leu Asp Gly Lys Cys Ser Ile Ser Cys Asp Asp Glu Thr Val
 835 840 845

Asn Cys Tyr Leu Ile Asp Asn Asn Gly Phe Ile Leu Val Ser Glu Asp
 850 855 860

Tyr Thr Gln Thr Gly Asp Phe Phe Gly Glu Ile Glu Gly Ala Val Met
 865 870 875 880

Asn Lys Leu Leu Thr Met Gly Ser Phe Lys Arg Ile Thr Leu Tyr Asp
 885 890 895

Tyr Gln Ala Met Cys Arg Ala Asn Lys Glu Ser Ser Asp Gly Ala His
 900 905 910

Gly Leu Leu Asp Pro Tyr Asn Ala Phe Leu Ser Ala Val Lys Trp Ile
 915 920 925

Met Thr Glu Leu Val Leu Phe Leu Val Glu Phe Asn Leu Cys Ser Trp
 930 935 940

Trp His Ser Asp Met Thr Ala Lys Ala Gln Lys Leu Lys Gln Thr Leu
 945 950 955 960

Glu Pro Cys Asp Thr Glu Tyr Pro Ala Phe Val Ser Glu Arg Thr Ile
 965 970 975

Lys Glu Thr Thr Gly Asn Ile Ala Cys Glu Asp Cys Ser Lys Ser Phe
 980 985 990

Val Ile Gln Gln Ile Pro Ser Ser Asn Leu Phe Met Val Val Val Asp
 995 1000 1005

Ser Ser Cys Leu Cys Glu Ser Val Ala Pro Ile Thr Met Ala Pro Ile
 1010 1015 1020

Glu Ile Arg Tyr Asn Glu Ser Leu Lys Cys Glu Arg Leu Lys
 1025 1030 1035

<210> 12

<211> 1065

<212> PRT

<213> Homo sapiens

<400> 12

Met Ala Gly Pro Gly Ser Pro Arg Arg Ala Ser Arg Gly Ala Ser Ala

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20	25	30	
Ser Glu Gln Gln Ile Pro Leu Ser Val Val Lys Leu Trp Ala Ser Ala			
35	40	45	
Phe Gly Gly Glu Ile Lys Ser Ile Ala Ala Lys Tyr Ser Gly Ser Gln			
50	55	60	
Leu Leu Gln Lys Lys Tyr Lys Glu Tyr Glu Lys Asp Val Ala Ile Glu			
65	70	75	80
Glu Ile Asp Gly Leu Gln Leu Val Lys Lys Leu Ala Lys Asn Met Glu			
85	90	95	
Glu Met Phe His Lys Lys Ser Glu Ala Val Arg Arg Leu Val Glu Ala			
100	105	110	
Ala Glu Glu Ala His Leu Lys His Glu Phe Asp Ala Asp Leu Gln Tyr			
115	120	125	
Glu Tyr Phe Asn Ala Val Leu Ile Asn Glu Arg Asp Lys Asp Gly Asn			
130	135	140	
Phe Leu Glu Leu Gly Lys Glu Phe Ile Leu Ala Pro Asn Asp His Phe			
145	150	155	160
Asn Asn Leu Pro Val Asn Ile Ser Leu Ser Asp Val Gln Val Pro Thr			
165	170	175	
Asn Met Tyr Asn Lys Asp Pro Ala Ile Val Asn Gly Val Tyr Trp Ser			
180	185	190	
Glu Ser Leu Asn Lys Val Phe Val Asp Asn Phe Asp Arg Asp Pro Ser			
195	200	205	
Leu Ile Trp Gln Tyr Phe Gly Ser Ala Lys Gly Phe Phe Arg Gln Tyr			
210	215	220	
Pro Gly Ile Lys Trp Glu Pro Asp Glu Asn Gly Val Ile Ala Phe Asp			
225	230	235	240
Cys Arg Asn Arg Lys Trp Tyr Ile Gln Ala Ala Thr Ser Pro Lys Asp			
245	250	255	
Val Val Ile Leu Val Asp Val Ser Gly Ser Met Lys Gly Leu Arg Leu			

260	265	270
Thr Ile Ala Lys Gln Thr Val Ser Ser Ile Leu Asp Thr Leu Gly Asp		
275	280	285
Asp Asp Phe Phe Asn Ile Ile Ala Tyr Asn Glu Glu Leu His Tyr Val		
290	295	300
Glu Pro Cys Leu Asn Gly Thr Leu Val Gln Ala Asp Arg Thr Asn Lys		
305	310	315
Glu His Phe Arg Glu His Leu Asp Lys Leu Phe Ala Lys Gly Ile Gly		
	325	330
		335
Met Leu Asp Ile Ala Leu Asn Glu Ala Phe Asn Ile Leu Ser Asp Phe		
	340	345
		350
Asn His Thr Gly Gln Gly Ser Ile Cys Ser Gln Ala Ile Met Leu Ile		
	355	360
		365
Thr Asp Gly Ala Val Asp Thr Tyr Asp Thr Ile Phe Ala Lys Tyr Asn		
	370	375
		380
Trp Pro Asp Arg Lys Val Arg Ile Phe Thr Tyr Leu Ile Gly Arg Glu		
385	390	395
		400
Ala Ala Phe Ala Asp Asn Leu Lys Trp Met Ala Cys Ala Asn Lys Gly		
	405	410
		415
Phe Phe Thr Gln Ile Ser Thr Leu Ala Asp Val Gln Glu Asn Val Met		
	420	425
		430
Glu Tyr Leu His Val Leu Ser Arg Pro Lys Val Ile Asp Gln Glu His		
	435	440
		445
Asp Val Val Trp Thr Glu Ala Tyr Ile Asp Ser Thr Leu Thr Asp Asp		
	450	455
		460
Gln Gly Pro Val Leu Met Thr Thr Val Ala Met Pro Val Phe Ser Lys		
465	470	475
		480
Gln Asn Glu Thr Arg Ser Lys Gly Ile Leu Leu Gly Val Val Gly Thr		
	485	490
		495
Asp Val Pro Val Lys Glu Leu Leu Lys Thr Ile Pro Lys Tyr Lys Leu		
	500	505
		510
Gly Ile His Gly Tyr Ala Phe Ala Ile Thr Asn Asn Gly Tyr Ile Leu		

515	520	525
Thr His Pro Glu Leu Arg	Leu Leu Tyr Glu Glu Gly	Lys Lys Arg Arg
530	535	540
Lys Pro Asn Tyr Ser Ser Val Asp Leu Ser Glu Val Glu Trp Glu Asp		
545	550	555 560
Arg Asp Asp Val Leu Arg Asn Ala Met Val Asn Arg Lys Thr Gly Lys		
565	570	575
Phe Ser Met Glu Val Lys Lys Thr Val Asp Lys Gly Lys Arg Val Leu		
580	585	590
Val Met Thr Asn Asp Tyr Tyr Tyr Thr Asp Ile Lys Gly Thr Pro Phe		
595	600	605
Ser Leu Gly Val Ala Leu Ser Arg Gly His Gly Lys Tyr Phe Phe Arg		
610	615	620
Gly Asn Val Thr Ile Glu Glu Gly Leu His Asp Leu Glu His Pro Asp		
625	630	635 640
Val Ser Leu Ala Asp Glu Trp Ser Tyr Cys Asn Thr Asp Leu His Pro		
645	650	655
Glu His Arg His Leu Ser Gln Leu Glu Ala Ile Lys Leu Tyr Leu Lys		
660	665	670
Gly Lys Glu Pro Leu Leu Gln Cys Asp Lys Glu Leu Ile Gln Glu Val		
675	680	685
Leu Phe Asp Ala Val Val Ser Ala Pro Ile Glu Ala Tyr Trp Thr Ser		
690	695	700
Leu Ala Leu Asn Lys Ser Glu Asn Ser Asp Lys Gly Val Glu Val Ala		
705	710	715 720
Phe Leu Gly Thr Arg Thr Gly Leu Ser Arg Ile Asn Leu Phe Val Gly		
725	730	735
Ala Glu Gln Leu Thr Asn Gln Asp Phe Leu Lys Ala Gly Asp Lys Glu		
740	745	750
Asn Ile Phe Asn Ala Asp His Phe Pro Leu Trp Tyr Arg Arg Ala Ala		
755	760	765
Glu Gln Ile Pro Gly Ser Phe Val Tyr Ser Ile Pro Phe Ser Thr Gly		

770	775	780	
Pro Val Asn Lys Ser Asn Val Val Thr Ala Ser Thr Ser Ile Gln Leu			
785	790	795	800
Leu Asp Glu Arg Lys Ser Pro Val Val Ala Ala Val Gly Ile Gln Met			
	805	810	815
Lys Leu Glu Phe Phe Gln Arg Lys Phe Trp Thr Ala Ser Arg Gln Cys			
	820	825	830
Ala Ser Leu Asp Gly Lys Cys Ser Ile Ser Cys Asp Asp Glu Thr Val			
	835	840	845
Asn Cys Tyr Leu Ile Asp Asn Asn Gly Phe Ile Leu Val Ser Glu Asp			
	850	855	860
Tyr Thr Gln Thr Gly Asp Phe Phe Gly Glu Ile Glu Gly Ala Val Met			
865	870	875	880
Asn Lys Leu Leu Thr Met Gly Ser Phe Lys Arg Ile Thr Leu Tyr Asp			
	885	890	895
Tyr Gln Ala Met Cys Arg Ala Asn Lys Glu Ser Ser Asp Gly Ala His			
	900	905	910
Gly Leu Leu Asp Pro Tyr Asn Ala Phe Leu Ser Ala Val Lys Trp Ile			
	915	920	925
Met Thr Glu Leu Val Leu Phe Leu Val Glu Phe Asn Leu Cys Ser Trp			
	930	935	940
Trp His Ser Asp Met Thr Ala Lys Ala Gln Lys Leu Lys Gln Thr Leu			
945	950	955	960
Glu Pro Cys Asp Thr Glu Tyr Pro Ala Phe Val Ser Glu Arg Thr Ile			
	965	970	975
Lys Glu Thr Thr Gly Asn Ile Ala Cys Glu Asp Cys Ser Lys Ser Phe			
	980	985	990
Val Ile Gln Gln Ile Pro Ser Ser Asn Leu Phe Met Val Val Val Asp			
	995	1000	1005
Ser Ser Cys Leu Cys Glu Ser Val Ala Pro Ile Thr Met Ala Pro Ile			
1010	1015	1020	
Glu Ile Arg Tyr Asn Glu Ser Leu Lys Cys Glu Arg Leu Lys Ala Gln			

1025 1030 1035 1040

Lys Ile Arg Arg Arg Pro Glu Ser Cys His Gly Phe His Pro Glu Glu
1045 1050 1055

Asn Ala Arg Glu Cys Gly Gly Ala Pro
1060 1065

<210> 13
<211> 912
<212> DNA
<213> Homo sapiens

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ctgacacctg aggacgaggc cagcgtgttc accctggacc gcttcccgt gtggtaccgc 120
caggcctcag agcatcctgc tggcagcttc gtcttcaacc tccgctgggc agaaggacca 180
gaaagtgcgg gtgaacccat ggtggtgacg gcaagcacag ctgtggcggg gaccgtggac 240
aagaggacag ccattgctgc agccgcgggc gtccaaatga agctggaatt cctccagcgc 300
aaattctggg cggcaacgcg gcagtgcagc actgtggatg ggccgtgcac acagagctgc 360
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aggtcccag agacgggaag atttctgggg gaggtggatg gtgctgtcct gaccagctg 480
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tcgagtcacc accacagtgc agcccagccc ctggtcagcc caatttctgc cttcttgacg 600
gcgaccaggt ggctgctgca ggagctggtg ctgttcctgc tggagtggag tgtctggggc 660
tcctggtacg acagaggggc cgaggccaaa agtgtcttcc atcactcca caaacacaag 720
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atccgggagg ccaacgggat cgtggagtgc gggccctgcc agaaggtatt tgtggtgcag 840
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ttcccaccag tg 912

<210> 14
<211> 969
<212> DNA
<213> Homo sapiens

<400> 14
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caggcctcag agcatcctgc tggcagcttc gtcttcaacc tccgctgggc agaaggacca 180
gaaagtgcgg gtgaacccat ggtggtgacg gcaagcacag ctgtggcggg gaccgtggac 240
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gaggacagtg atctggactg cttcgtcatc gacaacaacg ggttcattct gatctccaag 420
aggtcccag agacgggaag atttctgggg gaggtggatg gtgctgtcct gaccagctg 480
ctcagcatgg ggggtgttcag ccaagtgact atgtatgact atcaggccat gtgcaaacc 540

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tcgagtcacc accacagtgc agcccagccc ctggtcagcc caatttctgc cttcttgacg 600
gcgaccaggt ggctgctgca ggagctggtg ctgttcctgc tggagtggag tgtctggggc 660
tcctggtacg acagaggggc cgaggccaaa agtgtcttcc atcactccca caaacacaag 720
aagcaggacc cgctgcagcc ctgcgacacg gagtaccccg tggtcgtgta ccagccggcc 780
atccgggagg ccaacgggat cgtggagtgc gggccctgcc agaaggattt tgtggtgcag 840
cagattccca acagtaacct cctcctcctg gtgacagacc ccacctgtga ctgcagcatc 900
ttcccaccag tgctgcagga ggcgacagaa gtcaaatata atgcctctgt caaatgtgac 960
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969

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<210> 15

<211> 1050

<212> DNA

<213> Homo sapiens

<400> 15

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caggcctcag agcatcctgc tggcagcttc gtcttcaacc tccgctgggc agaaggacca 180
gaaagtgcgg gtgaacccat ggtggtgacg gcaagcacag ctgtggcggg gaccgtggac 240
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gcgaccaggt ggctgctgca ggagctggtg ctgttcctgc tggagtggag tgtctggggc 660
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cggatgcgct ccagaagct ccgcggcgca ccagactcct gccacgcctt ccatccagag 1020
gagaatgccc aggactgcgg cggcgccctcg
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<210> 16

<211> 304

<212> PRT

<213> Homo sapiens

<400> 16

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Ser Gly Leu Leu Arg Ser Ser Leu Phe Val Gly Ser Glu Lys Val Ser
  1                      5                      10                      15

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Asp Arg Lys Phe Leu Thr Pro Glu Asp Glu Ala Ser Val Phe Thr Leu
      20                      25                      30

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Leu Leu Val Thr Asp Pro Thr Cys Asp Cys Ser Ile Phe Pro Pro Val
 290 295 300

<210> 17

<211> 323

<212> PRT

<213> Homo sapiens

<400> 17

Ser Gly Leu Leu Arg Ser Ser Leu Phe Val Gly Ser Glu Lys Val Ser
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 20 25 30

Asp Arg Phe Pro Leu Trp Tyr Arg Gln Ala Ser Glu His Pro Ala Gly
 35 40 45

Ser Phe Val Phe Asn Leu Arg Trp Ala Glu Gly Pro Glu Ser Ala Gly
 50 55 60

Glu Pro Met Val Val Thr Ala Ser Thr Ala Val Ala Val Thr Val Asp
 65 70 75 80

Lys Arg Thr Ala Ile Ala Ala Ala Ala Gly Val Gln Met Lys Leu Glu
 85 90 95

Phe Leu Gln Arg Lys Phe Trp Ala Ala Thr Arg Gln Cys Ser Thr Val
 100 105 110

Asp Gly Pro Cys Thr Gln Ser Cys Glu Asp Ser Asp Leu Asp Cys Phe
 115 120 125

Val Ile Asp Asn Asn Gly Phe Ile Leu Ile Ser Lys Arg Ser Arg Glu
 130 135 140

Thr Gly Arg Phe Leu Gly Glu Val Asp Gly Ala Val Leu Thr Gln Leu
 145 150 155 160

Leu Ser Met Gly Val Phe Ser Gln Val Thr Met Tyr Asp Tyr Gln Ala
 165 170 175

Met Cys Lys Pro Ser Ser His His His Ser Ala Ala Gln Pro Leu Val
 180 185 190

Ser Pro Ile Ser Ala Phe Leu Thr Ala Thr Arg Trp Leu Leu Gln Glu
 195 200 205
 Leu Val Leu Phe Leu Leu Glu Trp Ser Val Trp Gly Ser Trp Tyr Asp
 210 215 220
 Arg Gly Ala Glu Ala Lys Ser Val Phe His His Ser His Lys His Lys
 225 230 235 240
 Lys Gln Asp Pro Leu Gln Pro Cys Asp Thr Glu Tyr Pro Val Phe Val
 245 250 255
 Tyr Gln Pro Ala Ile Arg Glu Ala Asn Gly Ile Val Glu Cys Gly Pro
 260 265 270
 Cys Gln Lys Val Phe Val Val Gln Gln Ile Pro Asn Ser Asn Leu Leu
 275 280 285
 Leu Leu Val Thr Asp Pro Thr Cys Asp Cys Ser Ile Phe Pro Pro Val
 290 295 300
 Leu Gln Glu Ala Thr Glu Val Lys Tyr Asn Ala Ser Val Lys Cys Asp
 305 310 315 320
 Arg Met Arg

<210> 18
 <211> 350
 <212> PRT
 <213> Homo sapiens

<400> 18
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 20 25 30
 Asp Arg Phe Pro Leu Trp Tyr Arg Gln Ala Ser Glu His Pro Ala Gly
 35 40 45
 Ser Phe Val Phe Asn Leu Arg Trp Ala Glu Gly Pro Glu Ser Ala Gly
 50 55 60
 Glu Pro Met Val Val Thr Ala Ser Thr Ala Val Ala Val Thr Val Asp

65					70						75				80
Lys	Arg	Thr	Ala	Ile	Ala	Ala	Ala	Ala	Gly	Val	Gln	Met	Lys	Leu	Glu
				85					90					95	
Phe	Leu	Gln	Arg	Lys	Phe	Trp	Ala	Ala	Thr	Arg	Gln	Cys	Ser	Thr	Val
			100					105					110		
Asp	Gly	Pro	Cys	Thr	Gln	Ser	Cys	Glu	Asp	Ser	Asp	Leu	Asp	Cys	Phe
		115					120					125			
Val	Ile	Asp	Asn	Asn	Gly	Phe	Ile	Leu	Ile	Ser	Lys	Arg	Ser	Arg	Glu
	130					135					140				
Thr	Gly	Arg	Phe	Leu	Gly	Glu	Val	Asp	Gly	Ala	Val	Leu	Thr	Gln	Leu
145					150					155					160
Leu	Ser	Met	Gly	Val	Phe	Ser	Gln	Val	Thr	Met	Tyr	Asp	Tyr	Gln	Ala
			165						170					175	
Met	Cys	Lys	Pro	Ser	Ser	His	His	His	Ser	Ala	Ala	Gln	Pro	Leu	Val
			180					185					190		
Ser	Pro	Ile	Ser	Ala	Phe	Leu	Thr	Ala	Thr	Arg	Trp	Leu	Leu	Gln	Glu
		195					200					205			
Leu	Val	Leu	Phe	Leu	Leu	Glu	Trp	Ser	Val	Trp	Gly	Ser	Trp	Tyr	Asp
	210					215					220				
Arg	Gly	Ala	Glu	Ala	Lys	Ser	Val	Phe	His	His	Ser	His	Lys	His	Lys
225					230					235					240
Lys	Gln	Asp	Pro	Leu	Gln	Pro	Cys	Asp	Thr	Glu	Tyr	Pro	Val	Phe	Val
			245						250					255	
Tyr	Gln	Pro	Ala	Ile	Arg	Glu	Ala	Asn	Gly	Ile	Val	Glu	Cys	Gly	Pro
			260					265					270		
Cys	Gln	Lys	Val	Phe	Val	Val	Gln	Gln	Ile	Pro	Asn	Ser	Asn	Leu	Leu
		275					280					285			
Leu	Leu	Val	Thr	Asp	Pro	Thr	Cys	Asp	Cys	Ser	Ile	Phe	Pro	Pro	Val
	290					295					300				
Leu	Gln	Glu	Ala	Thr	Glu	Val	Lys	Tyr	Asn	Ala	Ser	Val	Lys	Cys	Asp
305					310					315					320
Arg	Met	Arg	Ser	Gln	Lys	Leu	Arg	Arg	Arg	Pro	Asp	Ser	Cys	His	Ala

325

330

335

Phe His Pro Glu Glu Asn Ala Gln Asp Cys Gly Gly Ala Ser
 340 345 350

<210> 19

<211> 5482

<212> DNA

<213> Homo sapiens

<400> 19

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cgccgcgcgc gccgcgcgca ctgccccccc tccccgcggc gccgcatctt gaatggaaac 180
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<213> Homo sapiens

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 35 40 45

Pro Leu Leu Pro Leu Leu Ala Ala Pro Gly Ala Ser Ala Tyr Ser Phe
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Pro Gln Gln His Thr Met Gln His Trp Ala Arg Arg Leu Glu Gln Glu
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Val Asp Gly Val Met Arg Ile Phe Gly Gly Val Gln Gln Leu Arg Glu
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Ile Tyr Lys Asp Asn Arg Asn Leu Phe Glu Val Gln Glu Asn Glu Pro
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Gln Lys Leu Val Glu Lys Val Ala Gly Asp Ile Glu Ser Leu Leu Asp
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Arg Lys Val Gln Ala Leu Lys Arg Leu Ala Asp Ala Ala Glu Asn Phe
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Gln Lys Ala His Arg Trp Gln Asp Asn Ile Lys Glu Glu Asp Ile Val
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Tyr Tyr Asp Ala Lys Ala Asp Ala Glu Leu Asp Asp Pro Glu Ser Glu
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Gln Ile Pro Thr Asp Ile Tyr Lys Gly Ser Thr Val Ile Leu Asn Glu		
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Gln Asp Pro Thr Leu Leu Trp Gln Val Phe Gly Ser Ala Thr Gly Val		
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Thr Arg Tyr Tyr Pro Ala Thr Pro Trp Arg Ala Pro Lys Lys Ile Asp		
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Pro Lys Asp Met Val Ile Ile Val Asp Val Ser Gly Ser Val Ser Gly		
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Leu Ser Asp Asp Asp Tyr Val Asn Val Ala Ser Phe Asn Glu Lys Ala		
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Gln Pro Val Ser Cys Phe Thr His Leu Val Gln Ala Asn Val Arg Asn		
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Ser Asn Ile Thr Arg Ala Asn Cys Asn Lys Met Ile Met Met Phe Thr		
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Asp Gly Gly Glu Asp Arg Val Gln Asp Val Phe Glu Lys Tyr Asn Trp		
405	410	415
Pro Asn Arg Thr Val Arg Val Phe Thr Phe Ser Val Gly Gln His Asn		
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Tyr Asp Val Thr Pro Leu Gln Trp Met Ala Cys Ala Asn Lys Gly Tyr
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Tyr Phe Glu Ile Pro Ser Ile Gly Ala Ile Arg Ile Asn Thr Gln Glu
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Tyr Leu Asp Val Leu Gly Arg Pro Met Val Leu Ala Gly Lys Glu Ala
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485 490 495

Leu Val Val Thr Gly Thr Leu Pro Val Phe Asn Leu Thr Gln Asp Gly
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Pro Gly Glu Lys Lys Asn Gln Leu Ile Leu Gly Val Met Gly Ile Asp
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Ala Asn Gly Tyr Val Phe Ala Ile Asp Leu Asn Gly Tyr Val Leu Leu
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His Pro Asn Leu Lys Pro Gln Thr Thr Asn Phe Arg Glu Pro Val Thr
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Leu Asp Phe Leu Asp Ala Glu Leu Glu Asp Glu Asn Lys Glu Glu Ile
580 585 590

Arg Arg Ser Met Ile Asp Gly Asn Lys Gly His Lys Gln Ile Arg Thr
595 600 605

Leu Val Lys Ser Leu Asp Glu Arg Tyr Ile Asp Glu Val Thr Arg Asn
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Tyr Thr Trp Val Pro Ile Arg Ser Thr Asn Tyr Ser Leu Gly Leu Val
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Leu Pro Pro Tyr Ser Thr Phe Tyr Leu Gln Ala Asn Leu Ser Asp Gln
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Ile Leu Gln Val Lys Tyr Phe Glu Phe Leu Leu Pro Ser Ser Phe Glu
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Ser Glu Gly His Val Phe Ile Ala Pro Arg Glu Tyr Cys Lys Asp Leu
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Asn Ala Ser Asp Asn Asn Thr Glu Phe Leu Lys Asn Phe Ile Glu Leu
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Met Glu Lys Val Thr Pro Asp Ser Lys Gln Cys Asn Asn Phe Leu Leu
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Val Trp Arg Asp Gln Asp Leu Asn Thr Tyr Ser Leu Leu Ala Val Phe
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Ala Ala Thr Asp Gly Gly Ile Thr Arg Val Phe Pro Asn Lys Ala Ala
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Arg Ser Leu Asp Asn His Gly Tyr Val Phe Lys Pro Pro His Gln Asp
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Val Ser Thr Ala Val Glu Leu Ser Leu Gly Arg Arg Thr Leu Arg Pro
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Ala Val Val Gly Val Lys Leu Asp Leu Glu Ala Trp Ala Glu Lys Phe
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Lys Val Leu Ala Ser Asn Arg Thr His Gln Asp Gln Pro Gln Lys Cys
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Gly Pro Asn Ser His Cys Glu Met Asp Cys Glu Val Asn Asn Glu Asp
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Leu Leu Cys Val Leu Ile Asp Asp Gly Gly Phe Leu Val Leu Ser Asn
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Ala Asn Leu Met Leu Ala Leu Tyr Asn Asn Ser Phe Tyr Thr Arg Lys
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Gln Cys Glu Ala Gly Arg Leu Leu Gln Lys Glu Thr His Cys Pro Ala
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Asp Gly Pro Glu Gln Cys Glu Leu Val Gln Arg Pro Arg Tyr Arg Arg
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Gly Pro His Ile Cys Phe Asp Tyr Asn Ala Thr Glu Asp Thr Ser Asp
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Cys Gly Arg Gly Ala Ser Phe Pro Pro Ser Leu Gly Val Leu Val Ser
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<212> DNA

<213> Homo sapiens

<400> 21

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<213> Homo sapiens

<400> 22

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Phe Gly Gly Glu Ile Lys Ser Ile Ala Ala Lys Tyr Ser Gly Ser Gln
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Glu Ile Asp Gly Leu Gln Leu Val Lys Lys Leu Ala Lys Asn Met Glu
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Glu Met Phe His Lys Lys Ser Glu Ala Val Arg Arg Leu Val Glu Ala
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Ala Glu Glu Ala His Leu Lys His Glu Phe Asp Ala Asp Leu Gln Tyr
115 120 125

Glu Tyr Phe Asn Ala Val Leu Ile Asn Glu Arg Asp Lys Asp Gly Asn
130 135 140

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Pro	Gly	Ile	Lys	Trp	Glu	Pro	Asp	Glu	Asn	Gly	Val	Ile	Ala	Phe	Asp	
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Cys	Arg	Asn	Arg	Lys	Trp	Tyr	Ile	Gln	Ala	Ala	Thr	Ser	Pro	Lys	Asp	
				245				250						255		
Val	Val	Ile	Leu	Val	Asp	Val	Ser	Gly	Ser	Met	Lys	Gly	Leu	Arg	Leu	
			260					265					270			
Thr	Ile	Ala	Lys	Gln	Thr	Val	Ser	Ser	Ile	Leu	Asp	Thr	Leu	Gly	Asp	
		275					280					285				
Asp	Asp	Phe	Phe	Asn	Ile	Ile	Ala	Tyr	Asn	Glu	Glu	Leu	His	Tyr	Val	
	290					295					300					
Glu	Pro	Cys	Leu	Asn	Gly	Thr	Leu	Val	Gln	Ala	Asp	Arg	Thr	Asn	Lys	
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Glu	His	Phe	Arg	Glu	His	Leu	Asp	Lys	Leu	Phe	Ala	Lys	Gly	Ile	Gly	
				325					330					335		
Met	Leu	Asp	Ile	Ala	Leu	Asn	Glu	Ala	Phe	Asn	Ile	Leu	Ser	Asp	Phe	
			340					345					350			
Asn	His	Thr	Gly	Gln	Gly	Ser	Ile	Cys	Ser	Gln	Ala	Ile	Met	Leu	Ile	
		355					360					365				
Thr	Asp	Gly	Ala	Val	Asp	Thr	Tyr	Asp	Thr	Ile	Phe	Ala	Lys	Tyr	Asn	
	370					375					380					
Trp	Pro	Asp	Arg	Lys	Val	Arg	Ile	Phe	Thr	Tyr	Leu	Ile	Gly	Arg	Glu	
385					390					395					400	

Ala Ala Phe Ala Asp Asn Leu Lys Trp Met Ala Cys Ala Asn Lys Gly
 405 410 415
 Phe Phe Thr Gln Ile Ser Thr Leu Ala Asp Val Gln Glu Asn Val Met
 420 425 430
 Glu Tyr Leu His Val Leu Ser Arg Pro Lys Val Ile Asp Gln Glu His
 435 440 445
 Asp Val Val Trp Thr Glu Ala Tyr Ile Asp Ser Thr Leu Thr Asp Asp
 450 455 460
 Gln Gly Pro Val Leu Met Thr Thr Val Ala Met Pro Val Phe Ser Lys
 465 470 475 480
 Gln Asn Glu Thr Arg Ser Lys Gly Ile Leu Leu Gly Val Val Gly Thr
 485 490 495
 Asp Val Pro Val Lys Glu Leu Leu Lys Thr Ile Pro Lys Tyr Lys Leu
 500 505 510
 Gly Ile His Gly Tyr Ala Phe Ala Ile Thr Asn Asn Gly Tyr Ile Leu
 515 520 525
 Thr His Pro Glu Leu Arg Leu Leu Tyr Glu Glu Gly Lys Lys Arg Arg
 530 535 540
 Lys Pro Asn Tyr Ser Ser Val Asp Leu Ser Glu Val Glu Trp Glu Asp
 545 550 555 560
 Arg Asp Asp Val Leu Arg Asn Ala Met Val Asn Arg Lys Thr Gly Lys
 565 570 575
 Phe Ser Met Glu Val Lys Lys Thr Val Asp Lys Gly Lys Arg Val Leu
 580 585 590
 Val Met Thr Asn Asp Tyr Tyr Tyr Thr Asp Ile Lys Gly Thr Pro Phe
 595 600 605
 Ser Leu Gly Val Ala Leu Ser Arg Gly His Gly Lys Tyr Phe Phe Arg
 610 615 620
 Gly Asn Val Thr Ile Glu Glu Gly Leu His Asp Leu Glu His Pro Asp
 625 630 635 640
 Val Ser Leu Ala Asp Glu Trp Ser Tyr Cys Asn Thr Asp Leu His Pro
 645 650 655

Glu	His	Arg	His	Leu	Ser	Gln	Leu	Glu	Ala	Ile	Lys	Leu	Tyr	Leu	Lys	660	665	670
Gly	Lys	Glu	Pro	Leu	Leu	Gln	Cys	Asp	Lys	Glu	Leu	Ile	Gln	Glu	Val	675	680	685
Leu	Phe	Asp	Ala	Val	Val	Ser	Ala	Pro	Ile	Glu	Ala	Tyr	Trp	Thr	Ser	690	695	700
Leu	Ala	Leu	Asn	Lys	Ser	Glu	Asn	Ser	Asp	Lys	Gly	Val	Glu	Val	Ala	705	710	715
Phe	Leu	Gly	Thr	Arg	Thr	Gly	Leu	Ser	Arg	Ile	Asn	Leu	Phe	Val	Gly	725	730	735
Ala	Glu	Gln	Leu	Thr	Asn	Gln	Asp	Phe	Leu	Lys	Ala	Gly	Asp	Lys	Glu	740	745	750
Asn	Ile	Phe	Asn	Ala	Asp	His	Phe	Pro	Leu	Trp	Tyr	Arg	Arg	Ala	Ala	755	760	765
Glu	Gln	Ile	Pro	Gly	Ser	Phe	Val	Tyr	Ser	Ile	Pro	Phe	Ser	Thr	Gly	770	775	780
Pro	Val	Asn	Lys	Ser	Asn	Val	Val	Thr	Ala	Ser	Thr	Ser	Ile	Gln	Leu	785	790	795
Leu	Asp	Glu	Arg	Lys	Ser	Pro	Val	Val	Ala	Ala	Val	Gly	Ile	Gln	Met	805	810	815
Lys	Leu	Glu	Phe	Phe	Gln	Arg	Lys	Phe	Trp	Thr	Ala	Ser	Arg	Gln	Cys	820	825	830
Ala	Ser	Leu	Asp	Gly	Lys	Cys	Ser	Ile	Ser	Cys	Asp	Asp	Glu	Thr	Val	835	840	845
Asn	Cys	Tyr	Leu	Ile	Asp	Asn	Asn	Gly	Phe	Ile	Leu	Val	Ser	Glu	Asp	850	855	860
Tyr	Thr	Gln	Thr	Gly	Asp	Phe	Phe	Gly	Glu	Ile	Glu	Gly	Ala	Val	Met	865	870	875
Asn	Lys	Leu	Leu	Thr	Met	Gly	Ser	Phe	Lys	Arg	Ile	Thr	Leu	Tyr	Asp	885	890	895
Tyr	Gln	Ala	Met	Cys	Arg	Ala	Asn	Lys	Glu	Ser	Ser	Asp	Gly	Ala	His	900	905	910

35	40	45
Pro Leu Leu Pro Leu Leu Ala Ala Pro Gly Ala Ser Ala Tyr Ser Phe		
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Pro Gln Gln His Thr Met Gln His Trp Ala Arg Arg Leu Glu Gln Glu		
65	70	75
Val Asp Gly Val Met Arg Ile Phe Gly Gly Val Gln Gln Leu Arg Glu		
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Ile Tyr Lys Asp Asn Arg Asn Leu Phe Glu Val Gln Glu Asn Glu Pro		
	100	105
Gln Lys Leu Val Glu Lys Val Ala Gly Asp Ile Glu Ser Leu Leu Asp		
	115	120
Arg Lys Val Gln Ala Leu Lys Arg Leu Ala Asp Ala Ala Glu Asn Phe		
	130	135
Gln Lys Ala His Arg Trp Gln Asp Asn Ile Lys Glu Glu Asp Ile Val		
145	150	155
Tyr Tyr Asp Ala Lys Ala Asp Ala Glu Leu Asp Asp Pro Glu Ser Glu		
	165	170
Asp Val Glu Arg Gly Ser Lys Ala Ser Thr Leu Arg Leu Asp Phe Ile		
	180	185
Glu Asp Pro Asn Phe Lys Asn Lys Val Asn Tyr Ser Tyr Ala Ala Val		
	195	200
Gln Ile Pro Thr Asp Ile Tyr Lys Gly Ser Thr Val Ile Leu Asn Glu		
	210	215
Leu Asn Trp Thr Glu Ala Leu Glu Asn Val Phe Met Glu Asn Arg Arg		
225	230	235
Gln Asp Pro Thr Leu Leu Trp Gln Val Phe Gly Ser Ala Thr Gly Val		
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Thr Arg Tyr Tyr Pro Ala Thr Pro Trp Arg Ala Pro Lys Lys Ile Asp		
	260	265
Leu Tyr Asp Val Arg Arg Arg Pro Trp Tyr Ile Gln Gly Ala Ser Ser		
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Pro Lys Asp Met Val Ile Ile Val Asp Val Ser Gly Ser Val Ser Gly		

290		295		300
Leu Thr Leu Lys Leu Met Lys Thr Ser Val Cys Glu Met Leu Asp Thr				
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Leu Ser Asp Asp Asp Tyr Val Asn Val Ala Ser Phe Asn Glu Lys Ala				
	325		330	335
Gln Pro Val Ser Cys Phe Thr His Leu Val Gln Ala Asn Val Arg Asn				
	340		345	350
Lys Lys Val Phe Lys Glu Ala Val Gln Gly Met Val Ala Lys Gly Thr				
	355		360	365
Thr Gly Tyr Lys Ala Gly Phe Glu Tyr Ala Phe Asp Gln Leu Gln Asn				
	370		375	380
Ser Asn Ile Thr Arg Ala Asn Cys Asn Lys Met Ile Met Met Phe Thr				
385		390		395 400
Asp Gly Gly Glu Asp Arg Val Gln Asp Val Phe Glu Lys Tyr Asn Trp				
	405		410	415
Pro Asn Arg Thr Val Arg Val Phe Thr Phe Ser Val Gly Gln His Asn				
	420		425	430
Tyr Asp Val Thr Pro Leu Gln Trp Met Ala Cys Ala Asn Lys Gly Tyr				
	435		440	445
Tyr Phe Glu Ile Pro Ser Ile Gly Ala Ile Arg Ile Asn Thr Gln Glu				
	450		455	460
Tyr Leu Asp Val Leu Gly Arg Pro Met Val Leu Ala Gly Lys Glu Ala				
465		470		475 480
Lys Gln Val Gln Trp Thr Asn Val Tyr Glu Asp Ala Leu Gly Leu Gly				
	485		490	495
Leu Val Val Thr Gly Thr Leu Pro Val Phe Asn Leu Thr Gln Asp Gly				
	500		505	510
Pro Gly Glu Lys Lys Asn Gln Leu Ile Leu Gly Val Met Gly Ile Asp				
	515		520	525
Val Ala Leu Asn Asp Ile Lys Arg Leu Thr Pro Asn Tyr Thr Leu Gly				
	530		535	540
Ala Asn Gly Tyr Val Phe Ala Ile Asp Leu Asn Gly Tyr Val Leu Leu				

545					550					555				560	
His	Pro	Asn	Leu	Lys	Pro	Gln	Thr	Thr	Asn	Phe	Arg	Glu	Pro	Val	Thr
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Leu	Asp	Phe	Leu	Asp	Ala	Glu	Leu	Glu	Asp	Glu	Asn	Lys	Glu	Glu	Ile
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Arg	Arg	Ser	Met	Ile	Asp	Gly	Asn	Lys	Gly	His	Lys	Gln	Ile	Arg	Thr
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Leu	Val	Lys	Ser	Leu	Asp	Glu	Arg	Tyr	Ile	Asp	Glu	Val	Thr	Arg	Asn
	610					615					620				
Tyr	Thr	Trp	Val	Pro	Ile	Arg	Ser	Thr	Asn	Tyr	Ser	Leu	Gly	Leu	Val
625					630					635					640
Leu	Pro	Pro	Tyr	Ser	Thr	Phe	Tyr	Leu	Gln	Ala	Asn	Leu	Ser	Asp	Gln
				645					650					655	
Ile	Leu	Gln	Val	Lys	Tyr	Phe	Glu	Phe	Leu	Leu	Pro	Ser	Ser	Phe	Glu
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Ser	Glu	Gly	His	Val	Phe	Ile	Ala	Pro	Arg	Glu	Tyr	Cys	Lys	Asp	Leu
		675					680					685			
Asn	Ala	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Lys	Asn	Phe	Ile	Glu	Leu
	690					695					700				
Met	Glu	Lys	Val	Thr	Pro	Asp	Ser	Lys	Gln	Cys	Asn	Asn	Phe	Leu	Leu
705					710					715					720
His	Asn	Leu	Ile	Leu	Asp	Thr	Gly	Ile	Thr	Gln	Gln	Leu	Val	Glu	Arg
				725					730					735	
Val	Trp	Arg	Asp	Gln	Asp	Leu	Asn	Thr	Tyr	Ser	Leu	Leu	Ala	Val	Phe
			740					745					750		
Ala	Ala	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Phe	Pro	Asn	Lys	Ala	Ala
		755					760					765			
Glu	Asp	Trp	Thr	Glu	Asn	Pro	Glu	Pro	Phe	Asn	Ala	Ser	Phe	Tyr	Arg
	770					775					780				
Arg	Ser	Leu	Asp	Asn	His	Gly	Tyr	Val	Phe	Lys	Pro	Pro	His	Gln	Asp
785					790					795					800
Ala	Leu	Leu	Arg	Pro	Leu	Glu	Leu	Glu	Asn	Asp	Thr	Val	Gly	Ile	Leu

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Val	Ser	Thr	Ala	Val	Glu	Leu	Ser	Leu	Gly	Arg	Arg	Thr	Leu	Arg	Pro															
			820					825					830																	
Ala	Val	Val	Gly	Val	Lys	Leu	Asp	Leu	Glu	Ala	Trp	Ala	Glu	Lys	Phe															
		835					840					845																		
Lys	Val	Leu	Ala	Ser	Asn	Arg	Thr	His	Gln	Asp	Gln	Pro	Gln	Lys	Cys															
	850					855					860																			
Gly	Pro	Asn	Ser	His	Cys	Glu	Met	Asp	Cys	Glu	Val	Asn	Asn	Glu	Asp															
865					870					875				880																
Leu	Leu	Cys	Val	Leu	Ile	Asp	Asp	Gly	Gly	Phe	Leu	Val	Leu	Ser	Asn															
			885					890					895																	
Gln	Asn	His	Gln	Trp	Asp	Gln	Val	Gly	Arg	Phe	Phe	Ser	Glu	Val	Asp															
		900						905					910																	
Ala	Asn	Leu	Met	Leu	Ala	Leu	Tyr	Asn	Asn	Ser	Phe	Tyr	Thr	Arg	Lys															
		915					920					925																		
Glu	Ser	Tyr	Asp	Tyr	Gln	Ala	Ala	Cys	Ala	Pro	Gln	Pro	Pro	Gly	Asn															
	930					935				940																				
Leu	Gly	Ala	Ala	Pro	Arg	Gly	Val	Phe	Val	Pro	Thr	Val	Ala	Asp	Phe															
945					950				955					960																
Leu	Asn	Leu	Ala	Trp	Trp	Thr	Ser	Ala	Ala	Ala	Trp	Ser	Leu	Phe	Gln															
			965					970					975																	
Gln	Leu	Leu	Tyr	Gly	Leu	Ile	Tyr	His	Ser	Trp	Phe	Gln	Ala	Asp	Pro															
		980					985					990																		
Ala	Glu	Ala	Glu	Gly	Ser	Pro	Glu	Thr	Arg	Glu	Ser	Ser	Cys	Val	Met															
		995				1000						1005																		
Lys	Gln	Thr	Gln	Tyr	Tyr	Phe	Gly	Ser	Val	Asn	Ala	Ser	Tyr	Asn	Ala															
	1010					1015				1020																				
Ile	Ile	Asp	Cys	Gly	Asn	Cys	Ser	Arg	Leu	Phe	His	Ala	Gln	Arg	Leu															
1025				1030					1035					1040																
Thr	Asn	Thr	Asn	Leu	Leu	Phe	Val	Val	Ala	Glu	Lys	Pro	Leu	Cys	Ser															
			1045					1050					1055																	
Gln	Cys	Glu	Ala	Gly	Arg	Leu	Leu	Gln	Lys	Glu	Thr	His	Cys	Pro	Ala															

1060	1065	1070
Asp Gly Pro Glu Gln Cys Glu Leu Val Gln Arg Pro Arg Tyr Arg Arg		
1075	1080	1085
Gly Pro His Ile Cys Phe Asp Tyr Asn Ala Thr Glu Asp Thr Ser Asp		
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Cys Gly Arg Gly Ala His His His His His His		
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Ser Glu Gln Gln Ile Pro Leu Ser Val Val Lys Leu Trp Ala Ser Ala		
35	40	45
Phe Gly Gly Glu Ile Lys Ser Ile Ala Ala Lys Tyr Ser Gly Ser Gln		
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Leu Leu Gln Lys Lys Tyr Lys Glu Tyr Glu Lys Asp Val Ala Ile Glu		
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Glu Ile Asp Gly Leu Gln Leu Val Lys Lys Leu Ala Lys Ile Met Glu		
85	90	95
Glu Met Phe His Lys Lys Ser Glu Ala Val Arg Arg Leu Val Glu Ala		
100	105	110
Ala Glu Glu Ala His Leu Lys His Glu Phe Asp Ala Asp Leu Gln Tyr		
115	120	125
Glu Tyr Phe Asn Ala Val Leu Ile Asn Glu Arg Asp Lys Asp Gly Asn		
130	135	140
Phe Leu Glu Leu Gly Lys Glu Phe Ile Leu Ala Pro Asn Asp His Phe		
145	150	155 160

Asn	Asn	Leu	Pro	Val	Asn	Ile	Ser	Leu	Ser	Asp	Val	Gln	Val	Pro	Thr	165	170	175
Asn	Met	Tyr	Asn	Lys	Asp	Pro	Ala	Ile	Val	Asn	Gly	Val	Tyr	Trp	Ser	180	185	190
Glu	Ser	Leu	Asn	Lys	Val	Phe	Val	Asp	Asn	Phe	Asp	Arg	Asp	Pro	Ser	195	200	205
Leu	Ile	Trp	Gln	Tyr	Phe	Gly	Ser	Ala	Lys	Gly	Phe	Phe	Arg	Gln	Tyr	210	215	220
Pro	Gly	Ile	Lys	Trp	Glu	Pro	Asp	Glu	Asn	Gly	Val	Ile	Ala	Phe	Asp	225	230	235
Cys	Arg	Asn	Arg	Lys	Trp	Tyr	Ile	Gln	Ala	Ala	Thr	Ser	Pro	Lys	Asp	245	250	255
Val	Val	Ile	Leu	Val	Asp	Val	Ser	Gly	Ser	Met	Lys	Gly	Leu	Arg	Leu	260	265	270
Thr	Ile	Ala	Lys	Gln	Thr	Val	Ser	Ser	Ile	Leu	Asp	Thr	Leu	Gly	Asp	275	280	285
Asp	Asp	Phe	Phe	Asn	Ile	Ile	Thr	Tyr	Asn	Glu	Glu	Leu	His	Tyr	Val	290	295	300
Glu	Pro	Cys	Leu	Asn	Gly	Thr	Leu	Val	Gln	Ala	Asp	Arg	Thr	Asn	Lys	305	310	315
Glu	His	Phe	Arg	Glu	His	Leu	Asp	Lys	Leu	Phe	Ala	Lys	Gly	Ile	Gly	325	330	335
Met	Leu	Asp	Ile	Ala	Leu	Asn	Glu	Ala	Phe	Asn	Ile	Leu	Ser	Asp	Phe	340	345	350
Asn	His	Thr	Gly	Gln	Gly	Ser	Ile	Cys	Ser	Gln	Ala	Ile	Met	Leu	Ile	355	360	365
Thr	Asp	Gly	Ala	Val	Asp	Thr	Tyr	Asp	Thr	Ile	Phe	Ala	Lys	Tyr	Asn	370	375	380
Trp	Pro	Asp	Arg	Lys	Val	Arg	Ile	Phe	Thr	Tyr	Leu	Ile	Gly	Arg	Glu	385	390	395
Ala	Ala	Phe	Ala	Asp	Asn	Leu	Lys	Trp	Met	Ala	Cys	Ala	Asn	Lys	Gly	405	410	415

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Phe Phe Thr Gln Ile Ser Thr Leu Ala Asp Val Gln Glu Asn Val Met
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Glu Tyr Leu His Val Leu Ser Arg Pro Lys Val Ile Asp Gln Glu His
      435                      440                      445

Asp Val Val Trp Thr Glu Ala Tyr Ile Asp Ser Thr Leu Pro Gln Ala
      450                      455                      460

Gln Lys Leu Ala Asp Asp Gln Gly Leu Val Leu Met Thr Thr Val Ala
465                      470                      475                      480

Met Pro Val Phe Ser Lys Gln Asn Glu Thr Arg Ser Lys Gly Ile Leu
      485                      490                      495

Leu Gly Val Val Gly Thr Asp Val Pro Val Lys Glu Leu Leu Lys Thr
      500                      505                      510

Ile Pro Lys Tyr Lys Leu Gly Ile His Gly Tyr Ala Phe Ala Ile Thr
      515                      520                      525

Asn Asn Gly Tyr Ile Leu Thr His Pro Glu Leu Arg Pro Leu Tyr Glu
      530                      535                      540

Glu Gly Lys Lys Arg Arg Lys Pro Asn Tyr Ser Ser Val Asp Leu Ser
545                      550                      555                      560

Glu Val Glu Trp Glu Asp Arg Asp Asp Val Leu Arg Asn Ala Met Val
      565                      570                      575

Asn Arg Lys Thr Gly Lys Phe Ser Met Glu Val Lys Lys Thr Val Asp
      580                      585                      590

Lys Gly Lys Arg Val Leu Val Met Thr Asn Asp Tyr Tyr Tyr Thr Asp
      595                      600                      605

Ile Lys Gly Thr Pro Phe Ser Leu Gly Val Ala Leu Ser Arg Gly His
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Gly Lys Tyr Phe Phe Arg Gly Asn Val Thr Ile Glu Glu Gly Leu His
625                      630                      635                      640

Asp Leu Glu His Pro Asp Val Ser Leu Ala Asp Glu Trp Ser Tyr Cys
      645                      650                      655

Asn Thr Asp Leu His Pro Glu His Arg His Leu Ser Gln Leu Glu Ala
      660                      665                      670

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Ile Lys Leu Tyr Leu Lys Gly Lys Glu Pro Leu Leu Gln Cys Asp Lys
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Glu Leu Ile Gln Glu Val Leu Phe Asp Ala Val Val Ser Ala Pro Ile
 690 695 700

Glu Ala Tyr Trp Thr Ser Leu Ala Leu Asn Lys Ser Glu Asn Ser Asp
 705 710 715 720

Lys Gly Val Glu Val Ala Phe Leu Gly Thr Arg Thr Gly Leu Ser Arg
 725 730 735

Ile Asn Leu Phe Val Gly Ala Glu Gln Leu Thr Asn Gln Asp Phe Leu
 740 745 750

Lys Ala Gly Asp Lys Glu Asn Ile Phe Asn Ala Asp His Phe Pro Leu
 755 760 765

Trp Tyr Arg Arg Ala Ala Glu Gln Ile Ala Gly Ser Phe Val Tyr Ser
 770 775 780

Ile Pro Phe Ser Thr Gly Thr Val Asn Lys Ser Asn Val Val Thr Ala
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Ser Thr Ser Ile Gln Leu Leu Asp Glu Arg Lys Ser Pro Val Val Ala
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Ala Val Gly Ile Gln Met Lys Leu Glu Phe Phe Gln Arg Lys Phe Trp
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Thr Ala Ser Arg Gln Cys Ala Ser Leu Asp Gly Lys Cys Ser Ile Ser
 835 840 845

Cys Asp Asp Glu Thr Val Asn Cys Tyr Leu Ile Asp Asn Asn Gly Phe
 850 855 860

Ile Leu Val Ser Glu Asp Tyr Thr Gln Thr Gly Asp Phe Phe Gly Glu
 865 870 875 880

Val Glu Gly Ala Val Met Asn Lys Leu Leu Thr Met Gly Ser Phe Lys
 885 890 895

Arg Ile Thr Leu Tyr Asp Tyr Gln Ala Met Cys Arg Ala Asn Lys Glu
 900 905 910

Ser Ser Asp Ser Ala His Gly Leu Leu Asp Pro Tyr Lys Ala Phe Leu
 915 920 925

Ser Ala Ala Lys Trp Ile Met Thr Glu Leu Val Leu Phe Leu Val Glu
 930 935 940
 Phe Asn Leu Cys Ser Trp Trp His Ser Asp Met Thr Ala Lys Ala Gln
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 Lys Leu Lys Gln Thr Leu Glu Pro Cys Asp Thr Glu Tyr Pro Ala Phe
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 Val Ser Glu Arg Thr Ile Lys Glu Thr Thr Gly Asn Ile Ala Cys Glu
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 Asp Cys Ser Lys Ser Phe Val Ile Gln Gln Ile Pro Ser Ser Asn Leu
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 Glu Arg Leu Lys Ala Gln Lys Ile Arg Arg Arg Pro Glu Ser Cys His
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<220>

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<211> 49

<212> DNA

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<210> 27

<211> 23

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<223> Description of Artificial Sequence: primer

<400> 27

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<210> 28

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<213> Sus scrofa

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<213> Sus scrofa

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<213> Sus scrofa

<400> 33

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Lys	Thr	Ala	Ser	Gly	Val	Asn	Gln	Leu	Val	Asp	Ile	Tyr	Glu	Lys	Tyr
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Gln	Asp	Leu	Tyr	Thr	Val	Glu	Pro	Asn	Asn	Ala	Arg	Gln	Leu	Val	Glu
65					70					75					80
Ile	Ala	Ala	Arg	Asp	Ile	Glu	Lys	Leu	Leu	Ser	Asn	Arg	Ser	Lys	Ala
				85					90					95	
Leu	Val	Arg	Leu	Ala	Leu	Glu	Ala	Glu	Lys	Val	Gln	Ala	Ala	His	Gln
			100					105						110	
Trp	Arg	Glu	Asp	Phe	Ala	Ser	Asn	Glu	Val	Val	Tyr	Tyr	Asn	Ala	Lys
		115					120						125		
Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg
		130					135					140			
Ile	Lys	Pro	Val	Phe	Ile	Asp	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser
145					150					155					160
Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser
				165					170					175	
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val
			180					185					190		
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe
		195					200					205			
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val
	210					215					220				
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg
225					230					235				240	

Arg Pro Trp Tyr Ile Gln Gly Ala Ala Ser Pro Lys Asp Met Leu Ile
 245 250 255
 Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile
 260 265 270
 Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe
 275 280 285
 Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe
 290 295 300
 Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp
 305 310 315 320
 Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly
 325 330 335
 Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala
 340 345 350
 Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg
 355 360 365
 Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val
 370 375 380
 Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln
 385 390 395 400
 Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile
 405 410 415
 Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg
 420 425 430
 Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn
 435 440 445
 Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu
 450 455 460
 Pro Val Phe Asn Ile Thr Gly Gln Asn Glu Asn Lys Thr Asn Leu Lys
 465 470 475 480
 Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp
 485 490 495

Ile	Lys	Arg	Leu	Thr	Pro	Arg	Phe	Thr	Leu	Cys	Pro	Asn	Gly	Tyr	Tyr	500	505	510
Phe	Ala	Ile	Asp	Pro	Asn	Gly	Tyr	Val	Leu	Leu	His	Pro	Asn	Leu	Gln	515	520	525
Pro	Lys	Asn	Pro	Lys	Ser	Gln	Glu	Pro	Val	Thr	Leu	Asp	Phe	Leu	Asp	530	535	540
Ala	Glu	Leu	Glu	Asn	Asp	Ile	Lys	Val	Glu	Ile	Arg	Asn	Lys	Met	Ile	545	550	555
Asp	Gly	Glu	Ser	Gly	Glu	Lys	Thr	Phe	Arg	Thr	Leu	Val	Lys	Ser	Gln	565	570	575
Asp	Glu	Arg	Tyr	Ile	Asp	Lys	Gly	Asn	Arg	Thr	Tyr	Thr	Trp	Thr	Pro	580	585	590
Val	Asn	Gly	Thr	Asp	Tyr	Ser	Leu	Ala	Leu	Val	Leu	Pro	Thr	Tyr	Ser	595	600	605
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Ile	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg	610	615	620
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn	625	630	635
Phe	Glu	Glu	Ser	Gly	Tyr	Thr	Phe	Ile	Ala	Pro	Arg	Asp	Tyr	Cys	Asn	645	650	655
Asp	Leu	Lys	Ile	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Leu	Asn	Phe	Asn	660	665	670
Glu	Phe	Ile	Asp	Arg	Lys	Thr	Pro	Asn	Asn	Pro	Ser	Cys	Asn	Thr	Asp	675	680	685
Leu	Ile	Asn	Arg	Val	Leu	Leu	Asp	Ala	Gly	Phe	Thr	Asn	Glu	Leu	Val	690	695	700
Gln	Asn	Tyr	Trp	Ser	Lys	Gln	Lys	Asn	Ile	Lys	Gly	Val	Lys	Ala	Arg	705	710	715
Phe	Val	Val	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Tyr	Pro	Lys	Glu	Ala	725	730	735
Gly	Glu	Asn	Trp	Gln	Glu	Asn	Pro	Glu	Thr	Tyr	Glu	Asp	Ser	Phe	Tyr	740	745	750

Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe
 755 760 765
 Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys
 770 775 780
 Ala Val Glu Ile Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val
 785 790 795 800
 Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
 805 810 815
 Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
 820 825 830
 Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
 835 840 845
 Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
 850 855 860
 Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
 865 870 875 880
 Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
 885 890 895
 Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile
 900 905 910
 Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
 915 920 925
 Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
 930 935 940
 Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
 945 950 955 960
 Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
 965 970 975
 Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
 980 985 990
 Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
 995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln
 1010 1015 1020

Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro Arg Tyr
 1025 1030 1035 1040

Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Ala Leu Glu Asp Tyr
 1045 1050 1055

Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser Leu Trp Ser Ile
 1060 1065 1070

Phe Gly Ile Gln Cys Val Leu Leu Trp Leu Leu Ser Gly Ser Arg His
 1075 1080 1085

Tyr Gln Leu
 1090

<210> 34

<211> 1018

<212> PRT

<213> Sus scrofa

<400> 34

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser
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Leu Leu Ile Gly Pro Ser Ser Gln Glu Pro Phe Pro Ser Ala Val Thr
 20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala
 35 40 45

Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
 50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
 65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala
 85 90 95

Leu Val Arg Leu Ala Leu Glu Ala Glu Lys Val Gln Ala Ala His Gln
 100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys
 115 120 125

Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg	130	135	140	
Ile	Lys	Pro	Val	Phe	Ile	Asp	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser	145	150	155	160
Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser	165	170	175	
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val	180	185	190	
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe	195	200	205	
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val	210	215	220	
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg	225	230	235	240
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile	245	250	255	
Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile	260	265	270	
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe	275	280	285	
Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe	290	295	300	
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp	305	310	315	320
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly	325	330	335	
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala	340	345	350	
Asn	Cys	Asn	Lys	Ile	Ile	Met	Leu	Phe	Thr	Asp	Gly	Gly	Glu	Glu	Arg	355	360	365	
Ala	Gln	Glu	Ile	Phe	Ala	Lys	Tyr	Asn	Lys	Asp	Lys	Lys	Val	Arg	Val	370	375	380	

Phe	Thr	Phe	Ser	Val	Gly	Gln	His	Asn	Tyr	Asp	Arg	Gly	Pro	Ile	Gln	385	390	395	400
Trp	Met	Ala	Cys	Glu	Asn	Lys	Gly	Tyr	Tyr	Tyr	Glu	Ile	Pro	Ser	Ile	405	410	415	
Gly	Ala	Ile	Arg	Ile	Asn	Thr	Gln	Glu	Tyr	Leu	Asp	Val	Leu	Gly	Arg	420	425	430	
Pro	Met	Val	Leu	Ala	Gly	Asp	Lys	Ala	Lys	Gln	Val	Gln	Trp	Thr	Asn	435	440	445	
Val	Tyr	Leu	Asp	Ala	Leu	Glu	Leu	Gly	Leu	Val	Ile	Thr	Gly	Thr	Leu	450	455	460	
Pro	Val	Phe	Asn	Ile	Thr	Gly	Gln	Asn	Glu	Asn	Lys	Thr	Asn	Leu	Lys	465	470	475	480
Asn	Gln	Leu	Ile	Leu	Gly	Val	Met	Gly	Val	Asp	Val	Ser	Leu	Glu	Asp	485	490	495	
Ile	Lys	Arg	Leu	Thr	Pro	Arg	Phe	Thr	Leu	Cys	Pro	Asn	Gly	Tyr	Tyr	500	505	510	
Phe	Ala	Ile	Asp	Pro	Asn	Gly	Tyr	Val	Leu	Leu	His	Pro	Asn	Leu	Gln	515	520	525	
Pro	Lys	Asn	Pro	Lys	Ser	Gln	Glu	Pro	Val	Thr	Leu	Asp	Phe	Leu	Asp	530	535	540	
Ala	Glu	Leu	Glu	Asn	Asp	Ile	Lys	Val	Glu	Ile	Arg	Asn	Lys	Met	Ile	545	550	555	560
Asp	Gly	Glu	Ser	Gly	Glu	Lys	Thr	Phe	Arg	Thr	Leu	Val	Lys	Ser	Gln	565	570	575	
Asp	Glu	Arg	Tyr	Ile	Asp	Lys	Gly	Asn	Arg	Thr	Tyr	Thr	Trp	Thr	Pro	580	585	590	
Val	Asn	Gly	Thr	Asp	Tyr	Ser	Leu	Ala	Leu	Val	Leu	Pro	Thr	Tyr	Ser	595	600	605	
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Ile	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg	610	615	620	
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn	625	630	635	640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Asp Tyr Cys Asn
645 650 655
Asp Leu Lys Ile Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn
660 665 670
Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp
675 680 685
Leu Ile Asn Arg Val Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val
690 695 700
Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg
705 710 715 720
Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala
725 730 735
Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr
740 745 750
Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe
755 760 765
Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys
770 775 780
Ala Val Glu Ile Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val
785 790 795 800
Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
805 810 815
Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
820 825 830
Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
835 840 845
Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
850 855 860
Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
865 870 875 880
Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
885 890 895

Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile
900 905 910

Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
915 920 925

Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
930 935 940

Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
945 950 955 960

Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
965 970 975

Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
980 985 990

Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu
1010 1015

<210> 35

<211> 1036

<212> PRT

<213> Sus scrofa

<400> 35

Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser
1 5 10 15

Leu Leu Ile Gly Pro Ser Ser Gln Glu Pro Phe Pro Ser Ala Val Thr
20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala
35 40 45

Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala

85					90					95					
Leu	Val	Arg	Leu	Ala	Leu	Glu	Ala	Glu	Lys	Val	Gln	Ala	Ala	His	Gln
			100					105					110		
Trp	Arg	Glu	Asp	Phe	Ala	Ser	Asn	Glu	Val	Val	Tyr	Tyr	Asn	Ala	Lys
		115					120					125			
Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg
		130					135					140			
Ile	Lys	Pro	Val	Phe	Ile	Asp	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser
145							150					155			160
Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser
				165					170					175	
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val
			180					185					190		
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe
			195				200					205			
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val
		210					215					220			
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg
225							230					235			240
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile
				245					250					255	
Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile
			260						265					270	
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe
			275					280				285			
Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe
			290					295				300			
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp
305							310					315			320
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly
				325					330					335	
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala

340	345	350
Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg		
355	360	365
Ala Gln Glu Ile Phe Ala Lys Tyr Asn Lys Asp Lys Lys Val Arg Val		
370	375	380
Phe Thr Phe Ser Val Gly Gln His Asn Tyr Asp Arg Gly Pro Ile Gln		
385	390	395
Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile		
405	410	415
Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg		
420	425	430
Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn		
435	440	445
Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu		
450	455	460
Pro Val Phe Asn Ile Thr Gly Gln Asn Glu Asn Lys Thr Asn Leu Lys		
465	470	475
Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp		
485	490	495
Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr		
500	505	510
Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln		
515	520	525
Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp		
530	535	540
Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile		
545	550	555
Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln		
565	570	575
Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro		
580	585	590
Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser		

595					600					605					
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Ile	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg
610						615					620				
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn
625					630					635					640
Phe	Glu	Glu	Ser	Gly	Tyr	Thr	Phe	Ile	Ala	Pro	Arg	Asp	Tyr	Cys	Asn
				645					650					655	
Asp	Leu	Lys	Ile	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Leu	Asn	Phe	Asn
			660					665					670		
Glu	Phe	Ile	Asp	Arg	Lys	Thr	Pro	Asn	Asn	Pro	Ser	Cys	Asn	Thr	Asp
			675				680					685			
Leu	Ile	Asn	Arg	Val	Leu	Leu	Asp	Ala	Gly	Phe	Thr	Asn	Glu	Leu	Val
	690					695					700				
Gln	Asn	Tyr	Trp	Ser	Lys	Gln	Lys	Asn	Ile	Lys	Gly	Val	Lys	Ala	Arg
705					710					715					720
Phe	Val	Val	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Tyr	Pro	Lys	Glu	Ala
				725					730					735	
Gly	Glu	Asn	Trp	Gln	Glu	Asn	Pro	Glu	Thr	Tyr	Glu	Asp	Ser	Phe	Tyr
			740					745					750		
Lys	Arg	Ser	Leu	Asp	Asn	Asp	Asn	Tyr	Val	Phe	Thr	Ala	Pro	Tyr	Phe
		755					760					765			
Asn	Lys	Ser	Gly	Pro	Gly	Ala	Tyr	Glu	Ser	Gly	Ile	Met	Val	Ser	Lys
			770			775					780				
Ala	Val	Glu	Ile	Tyr	Ile	Gln	Gly	Lys	Leu	Leu	Lys	Pro	Ala	Val	Val
785					790					795					800
Gly	Ile	Lys	Ile	Asp	Val	Asn	Ser	Trp	Ile	Glu	Asn	Phe	Thr	Lys	Thr
				805					810					815	
Ser	Ile	Arg	Asp	Pro	Cys	Ala	Gly	Pro	Val	Cys	Asp	Cys	Lys	Arg	Asn
			820					825					830		
Ser	Asp	Val	Met	Asp	Cys	Val	Ile	Leu	Asp	Asp	Gly	Gly	Phe	Leu	Leu
			835				840					845			
Met	Ala	Asn	His	Asp	Asp	Tyr	Thr	Asn	Gln	Ile	Gly	Arg	Phe	Phe	Gly

850	855	860
Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr		
865	870	875 880
Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala		
	885	890 895
Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile		
	900	905 910
Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser		
	915	920 925
Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu		
	930	935 940
Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln		
945	950	955 960
Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys		
	965	970 975
Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His		
	980	985 990
Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser		
	995	1000 1005
Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln		
1010	1015	1020
Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys		
1025	1030	1035
<210> 36		
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Met Ala Ala Gly Cys Leu Leu Ala Leu Thr Leu Thr Leu Phe Gln Ser		
1	5	10 15
Leu Leu Ile Gly Pro Ser Ser Gln Glu Pro Phe Pro Ser Ala Val Thr		
	20	25 30

Ile	Lys	Ser	Trp	Val	Asp	Lys	Met	Gln	Glu	Asp	Leu	Val	Thr	Leu	Ala			
		35					40					45						
Lys	Thr	Ala	Ser	Gly	Val	Asn	Gln	Leu	Val	Asp	Ile	Tyr	Glu	Lys	Tyr			
		50				55					60							
Gln	Asp	Leu	Tyr	Thr	Val	Glu	Pro	Asn	Asn	Ala	Arg	Gln	Leu	Val	Glu			
		65			70					75					80			
Ile	Ala	Ala	Arg	Asp	Ile	Glu	Lys	Leu	Leu	Ser	Asn	Arg	Ser	Lys	Ala			
				85					90					95				
Leu	Val	Arg	Leu	Ala	Leu	Glu	Ala	Glu	Lys	Val	Gln	Ala	Ala	His	Gln			
			100					105						110				
Trp	Arg	Glu	Asp	Phe	Ala	Ser	Asn	Glu	Val	Val	Tyr	Tyr	Asn	Ala	Lys			
		115					120					125						
Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg			
		130				135					140							
Ile	Lys	Pro	Val	Phe	Ile	Asp	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser			
	145				150					155				160				
Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser			
				165					170					175				
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val			
			180					185					190					
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe			
		195					200					205						
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val			
	210					215					220							
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg			
	225				230					235				240				
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile			
				245					250					255				
Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile			
		260						265					270					
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe			
		275					280					285						

Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe	290	295	300	
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp	305	310	315	320
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly	325	330	335	
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala	340	345	350	
Asn	Cys	Asn	Lys	Ile	Ile	Met	Leu	Phe	Thr	Asp	Gly	Gly	Glu	Glu	Arg	355	360	365	
Ala	Gln	Glu	Ile	Phe	Ala	Lys	Tyr	Asn	Lys	Asp	Lys	Lys	Val	Arg	Val	370	375	380	
Phe	Thr	Phe	Ser	Val	Gly	Gln	His	Asn	Tyr	Asp	Arg	Gly	Pro	Ile	Gln	385	390	395	400
Trp	Met	Ala	Cys	Glu	Asn	Lys	Gly	Tyr	Tyr	Tyr	Glu	Ile	Pro	Ser	Ile	405	410	415	
Gly	Ala	Ile	Arg	Ile	Asn	Thr	Gln	Glu	Tyr	Leu	Asp	Val	Leu	Gly	Arg	420	425	430	
Pro	Met	Val	Leu	Ala	Gly	Asp	Lys	Ala	Lys	Gln	Val	Gln	Trp	Thr	Asn	435	440	445	
Val	Tyr	Leu	Asp	Ala	Leu	Glu	Leu	Gly	Leu	Val	Ile	Thr	Gly	Thr	Leu	450	455	460	
Pro	Val	Phe	Asn	Ile	Thr	Gly	Gln	Asn	Glu	Asn	Lys	Thr	Asn	Leu	Lys	465	470	475	480
Asn	Gln	Leu	Ile	Leu	Gly	Val	Met	Gly	Val	Asp	Val	Ser	Leu	Glu	Asp	485	490	495	
Ile	Lys	Arg	Leu	Thr	Pro	Arg	Phe	Thr	Leu	Cys	Pro	Asn	Gly	Tyr	Tyr	500	505	510	
Phe	Ala	Ile	Asp	Pro	Asn	Gly	Tyr	Val	Leu	Leu	His	Pro	Asn	Leu	Gln	515	520	525	
Pro	Lys	Asn	Pro	Lys	Ser	Gln	Glu	Pro	Val	Thr	Leu	Asp	Phe	Leu	Asp	530	535	540	

Ala	Glu	Leu	Glu	Asn	Asp	Ile	Lys	Val	Glu	Ile	Arg	Asn	Lys	Met	Ile	545	550	555	560
Asp	Gly	Glu	Ser	Gly	Glu	Lys	Thr	Phe	Arg	Thr	Leu	Val	Lys	Ser	Gln	565	570	575	
Asp	Glu	Arg	Tyr	Ile	Asp	Lys	Gly	Asn	Arg	Thr	Tyr	Thr	Trp	Thr	Pro	580	585	590	
Val	Asn	Gly	Thr	Asp	Tyr	Ser	Leu	Ala	Leu	Val	Leu	Pro	Thr	Tyr	Ser	595	600	605	
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Ile	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg	610	615	620	
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn	625	630	635	640
Phe	Glu	Glu	Ser	Gly	Tyr	Thr	Phe	Ile	Ala	Pro	Arg	Asp	Tyr	Cys	Asn	645	650	655	
Asp	Leu	Lys	Ile	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Leu	Asn	Phe	Asn	660	665	670	
Glu	Phe	Ile	Asp	Arg	Lys	Thr	Pro	Asn	Asn	Pro	Ser	Cys	Asn	Thr	Asp	675	680	685	
Leu	Ile	Asn	Arg	Val	Leu	Leu	Asp	Ala	Gly	Phe	Thr	Asn	Glu	Leu	Val	690	695	700	
Gln	Asn	Tyr	Trp	Ser	Lys	Gln	Lys	Asn	Ile	Lys	Gly	Val	Lys	Ala	Arg	705	710	715	720
Phe	Val	Val	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Tyr	Pro	Lys	Glu	Ala	725	730	735	
Gly	Glu	Asn	Trp	Gln	Glu	Asn	Pro	Glu	Thr	Tyr	Glu	Asp	Ser	Phe	Tyr	740	745	750	
Lys	Arg	Ser	Leu	Asp	Asn	Asp	Asn	Tyr	Val	Phe	Thr	Ala	Pro	Tyr	Phe	755	760	765	
Asn	Lys	Ser	Gly	Pro	Gly	Ala	Tyr	Glu	Ser	Gly	Ile	Met	Val	Ser	Lys	770	775	780	
Ala	Val	Glu	Ile	Tyr	Ile	Gln	Gly	Lys	Leu	Leu	Lys	Pro	Ala	Val	Val	785	790	795	800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
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 Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
 820 825 830
 Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
 835 840 845
 Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
 850 855 860
 Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
 865 870 875 880
 Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
 885 890 895
 Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile
 900 905 910
 Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
 915 920 925
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 930 935 940
 Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
 945 950 955 960
 Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
 965 970 975
 Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
 980 985 990
 Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
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 Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln
 1010 1015 1020
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<211> 1069

<212> PRT

<213> Sus scrofa

<400> 37

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35 40 45

Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala
85 90 95

Leu Val Arg Leu Ala Leu Glu Ala Glu Lys Val Gln Ala Ala His Gln
100 105 110

Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys
115 120 125

Asp Asp Leu Asp Pro Glu Lys Asn Asp Ser Glu Pro Gly Ser Gln Arg
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Ile Lys Pro Val Phe Ile Asp Asp Ala Asn Phe Gly Arg Gln Ile Ser
145 150 155 160

Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser
165 170 175

Thr Ile Val Leu Asn Glu Leu Asn Trp Thr Ser Ala Leu Asp Glu Val
180 185 190

Phe Lys Lys Asn Arg Glu Glu Asp Pro Ser Leu Leu Trp Gln Val Phe
195 200 205

Pro Val Phe Asn Ile Thr Gly Gln Asn Glu Asn Lys Thr Asn Leu Lys
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Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp
 485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr
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Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln
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Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp
 530 535 540

Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile
 545 550 555 560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln
 565 570 575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro
 580 585 590

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser
 595 600 605

Phe Tyr Tyr Ile Lys Ala Lys Ile Glu Glu Thr Ile Thr Gln Ala Arg
 610 615 620

Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn
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Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Asp Tyr Cys Asn
 645 650 655

Asp Leu Lys Ile Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn
 660 665 670

Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Thr Asp
 675 680 685

Leu Ile Asn Arg Val Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val
 690 695 700

Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg
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Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala
725 730 735
Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr
740 745 750
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755 760 765
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770 775 780
Ala Val Glu Ile Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val
785 790 795 800
Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
805 810 815
Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
820 825 830
Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
835 840 845
Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
850 855 860
Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
865 870 875 880
Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
885 890 895
Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Ile
900 905 910
Ala Asp Ile Leu His Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
915 920 925
Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
930 935 940
Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
945 950 955 960
Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
965 970 975

Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
 980 985 990

Val Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
 995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln
 1010 1015 1020

Thr Ser Asp Gly Pro Asp Pro Cys Asp Met Val Lys Gln Pro Arg Tyr
 1025 1030 1035 1040

Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Ala Leu Glu Asp Tyr
 1045 1050 1055

Thr Asp Cys Gly Gly Val Ser His His His His His His
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<210> 38

<211> 3055

<212> DNA

<213> Homo sapiens

<400> 38

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<211> 3109

<212> DNA

<213> Homo sapiens

<400> 39

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gtattagact	gtggaaactg	ttccagaatc	tttcatggag	aaaagcttat	gaacaccaac	3000
ttaatattca	taatggttga	gagcaaagg	acatgtccat	gtgacacacg	actgctcata	3060
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<212> DNA

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caagaagacc ttgtcacact ggcaaaaaca gcaagtggag tcaatcagct tgttgatatt 180
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agtggaagtg ttagtggtat gacacttaaa ctgatccgaa catctgtctc cgaaatgtta 840
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 35 40 45
 Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
 50 55 60
 Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
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 Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala
 85 90 95
 Leu Val Ser Leu Ala Leu Glu Ala Glu Lys Val Gln Ala Ala His Gln
 100 105 110
 Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys
 115 120 125
 Asp Asp Leu Asp Pro Glu Lys Asn Asp Ser Glu Pro Gly Ser Gln Arg
 130 135 140
 Ile Lys Pro Val Phe Ile Glu Asp Ala Asn Phe Gly Arg Gln Ile Ser
 145 150 155 160
 Tyr Gln His Ala Ala Val His Ile Pro Thr Asp Ile Tyr Glu Gly Ser
 165 170 175

Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val	180	185	190
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe	195	200	205
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val	210	215	220
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg	225	230	235
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile	245	250	255
Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile	260	265	270
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe	275	280	285
Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe	290	295	300
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp	305	310	315
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly	325	330	335
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala	340	345	350
Asn	Cys	Asn	Lys	Ile	Ile	Met	Leu	Phe	Thr	Asp	Gly	Gly	Glu	Glu	Arg	355	360	365
Ala	Gln	Glu	Ile	Phe	Asn	Lys	Tyr	Asn	Lys	Asp	Lys	Lys	Val	Arg	Val	370	375	380
Phe	Arg	Phe	Ser	Val	Gly	Gln	His	Asn	Tyr	Glu	Arg	Gly	Pro	Ile	Gln	385	390	395
Trp	Met	Ala	Cys	Glu	Asn	Lys	Gly	Tyr	Tyr	Tyr	Glu	Ile	Pro	Ser	Ile	405	410	415
Gly	Ala	Ile	Arg	Ile	Asn	Thr	Gln	Glu	Tyr	Leu	Asp	Val	Leu	Gly	Arg	420	425	430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn
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Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu
 450 455 460

Pro Val Phe Asn Ile Thr Gly Gln Phe Glu Asn Lys Thr Asn Leu Lys
 465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp
 485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr
 500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln
 515 520 525

Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp
 530 535 540

Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile
 545 550 555 560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln
 565 570 575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro
 580 585 590

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser
 595 600 605

Phe Tyr Tyr Ile Lys Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg
 610 615 620

Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn
 625 630 635 640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Asp Tyr Cys Asn
 645 650 655

Asp Leu Lys Ile Ser Asp Asn Asn Thr Glu Phe Leu Leu Asn Phe Asn
 660 665 670

Glu Phe Ile Asp Arg Lys Thr Pro Asn Asn Pro Ser Cys Asn Ala Asp
 675 680 685

Leu Ile Asn Arg Val Leu Leu Asp Ala Gly Phe Thr Asn Glu Leu Val
 690 695 700

Gln Asn Tyr Trp Ser Lys Gln Lys Asn Ile Lys Gly Val Lys Ala Arg
 705 710 715 720

Phe Val Val Thr Asp Gly Gly Ile Thr Arg Val Tyr Pro Lys Glu Ala
 725 730 735

Gly Glu Asn Trp Gln Glu Asn Pro Glu Thr Tyr Glu Asp Ser Phe Tyr
 740 745 750

Lys Arg Ser Leu Asp Asn Asp Asn Tyr Val Phe Thr Ala Pro Tyr Phe
 755 760 765

Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys
 770 775 780

Ala Val Glu Ile Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val
 785 790 795 800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
 805 810 815

Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
 820 825 830

Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
 835 840 845

Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
 850 855 860

Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
 865 870 875 880

Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
 885 890 895

Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Val
 900 905 910

Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
 915 920 925

Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
 930 935 940

Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
 945 950 955 960
 Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
 965 970 975
 Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
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 Gly Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
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 Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu
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 35 40 45
 Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
 50 55 60
 Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
 65 70 75 80
 Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala
 85 90 95
 Leu Val Ser Leu Ala Leu Glu Ala Glu Lys Val Gln Ala Ala His Gln
 100 105 110
 Trp Arg Glu Asp Phe Ala Ser Asn Glu Val Val Tyr Tyr Asn Ala Lys
 115 120 125
 Asp Asp Leu Asp Pro Glu Lys Asn Asp Ser Glu Pro Gly Ser Gln Arg
 130 135 140

Ile	Lys	Pro	Val	Phe	Ile	Glu	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser	
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Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser	
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Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val	
			180					185					190			
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe	
		195					200					205				
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val	
	210					215					220					
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg	
225					230					235					240	
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile	
				245					250					255		
Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile	
			260					265					270			
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe	
		275					280					285				
Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe	
	290					295					300					
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp	
305					310					315					320	
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly	
				325					330					335		
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala	
			340					345					350			
Asn	Cys	Asn	Lys	Ile	Ile	Met	Leu	Phe	Thr	Asp	Gly	Gly	Glu	Glu	Arg	
		355					360					365				
Ala	Gln	Glu	Ile	Phe	Asn	Lys	Tyr	Asn	Lys	Asp	Lys	Lys	Val	Arg	Val	
	370					375					380					
Phe	Arg	Phe	Ser	Val	Gly	Gln	His	Asn	Tyr	Glu	Arg	Gly	Pro	Ile	Gln	
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Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile
 405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg
 420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn
 435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu
 450 455 460

Pro Val Phe Asn Ile Thr Gly Gln Phe Glu Asn Lys Thr Asn Leu Lys
 465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp
 485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr
 500 505 510

Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln
 515 520 525

Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp
 530 535 540

Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile
 545 550 555 560

Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln
 565 570 575

Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro
 580 585 590

Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser
 595 600 605

Phe Tyr Tyr Ile Lys Ala Lys Leu Glu Glu Thr Ile Thr Gln Ala Arg
 610 615 620

Ser Lys Lys Gly Lys Met Lys Asp Ser Glu Thr Leu Lys Pro Asp Asn
 625 630 635 640

Phe Glu Glu Ser Gly Tyr Thr Phe Ile Ala Pro Arg Asp Tyr Cys Asn
 645 650 655

Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
 915 920 925

Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
 930 935 940

Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
 945 950 955 960

Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
 965 970 975

Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
 980 985 990

Gly Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
 995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln
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Thr Ser Asp Gly Pro Asn Pro Cys Asp Met Val Lys
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<211> 1063

<212> PRT

<213> Homo sapiens

<400> 43

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 20 25 30

Ile Lys Ser Trp Val Asp Lys Met Gln Glu Asp Leu Val Thr Leu Ala
 35 40 45

Lys Thr Ala Ser Gly Val Asn Gln Leu Val Asp Ile Tyr Glu Lys Tyr
 50 55 60

Gln Asp Leu Tyr Thr Val Glu Pro Asn Asn Ala Arg Gln Leu Val Glu
 65 70 75 80

Ile Ala Ala Arg Asp Ile Glu Lys Leu Leu Ser Asn Arg Ser Lys Ala

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Trp	Arg	Glu	Asp	Phe	Ala	Ser	Asn	Glu	Val	Val	Tyr	Tyr	Asn	Ala	Lys
		115					120					125			
Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg
	130					135					140				
Ile	Lys	Pro	Val	Phe	Ile	Glu	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser
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Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser
				165					170					175	
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val
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Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe
		195					200					205			
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val
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Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg
225						230					235				240
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile
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Leu	Val	Asp	Val	Ser	Gly	Ser	Val	Ser	Gly	Leu	Thr	Leu	Lys	Leu	Ile
			260						265				270		
Arg	Thr	Ser	Val	Ser	Glu	Met	Leu	Glu	Thr	Leu	Ser	Asp	Asp	Asp	Phe
			275					280				285			
Val	Asn	Val	Ala	Ser	Phe	Asn	Ser	Asn	Ala	Gln	Asp	Val	Ser	Cys	Phe
	290					295					300				
Gln	His	Leu	Val	Gln	Ala	Asn	Val	Arg	Asn	Lys	Lys	Val	Leu	Lys	Asp
305						310					315				320
Ala	Val	Asn	Asn	Ile	Thr	Ala	Lys	Gly	Ile	Thr	Asp	Tyr	Lys	Lys	Gly
				325					330					335	
Phe	Ser	Phe	Ala	Phe	Glu	Gln	Leu	Leu	Asn	Tyr	Asn	Val	Ser	Arg	Ala

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355	360	365
Ala Gln Glu Ile Phe Asn Lys Tyr Asn Lys Asp Lys Lys Val Arg Val		
370	375	380
Phe Arg Phe Ser Val Gly Gln His Asn Tyr Glu Arg Gly Pro Ile Gln		
385	390	395
Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile		
405	410	415
Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg		
420	425	430
Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn		
435	440	445
Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu		
450	455	460
Pro Val Phe Asn Ile Thr Gly Gln Phe Glu Asn Lys Thr Asn Leu Lys		
465	470	475
Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp		
485	490	495
Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr		
500	505	510
Phe Ala Ile Asp Pro Asn Gly Tyr Val Leu Leu His Pro Asn Leu Gln		
515	520	525
Pro Lys Asn Pro Lys Ser Gln Glu Pro Val Thr Leu Asp Phe Leu Asp		
530	535	540
Ala Glu Leu Glu Asn Asp Ile Lys Val Glu Ile Arg Asn Lys Met Ile		
545	550	555
Asp Gly Glu Ser Gly Glu Lys Thr Phe Arg Thr Leu Val Lys Ser Gln		
565	570	575
Asp Glu Arg Tyr Ile Asp Lys Gly Asn Arg Thr Tyr Thr Trp Thr Pro		
580	585	590
Val Asn Gly Thr Asp Tyr Ser Leu Ala Leu Val Leu Pro Thr Tyr Ser		

595					600					605					
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Leu	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg
610						615						620			
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn
625					630					635					640
Phe	Glu	Glu	Ser	Gly	Tyr	Thr	Phe	Ile	Ala	Pro	Arg	Asp	Tyr	Cys	Asn
				645					650					655	
Asp	Leu	Lys	Ile	Ser	Asp	Asn	Asn	Thr	Glu	Phe	Leu	Leu	Asn	Phe	Asn
			660					665					670		
Glu	Phe	Ile	Asp	Arg	Lys	Thr	Pro	Asn	Asn	Pro	Ser	Cys	Asn	Ala	Asp
		675					680					685			
Leu	Ile	Asn	Arg	Val	Leu	Leu	Asp	Ala	Gly	Phe	Thr	Asn	Glu	Leu	Val
	690					695					700				
Gln	Asn	Tyr	Trp	Ser	Lys	Gln	Lys	Asn	Ile	Lys	Gly	Val	Lys	Ala	Arg
705					710					715					720
Phe	Val	Val	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Tyr	Pro	Lys	Glu	Ala
				725					730					735	
Gly	Glu	Asn	Trp	Gln	Glu	Asn	Pro	Glu	Thr	Tyr	Glu	Asp	Ser	Phe	Tyr
			740					745					750		
Lys	Arg	Ser	Leu	Asp	Asn	Asp	Asn	Tyr	Val	Phe	Thr	Ala	Pro	Tyr	Phe
		755					760					765			
Asn	Lys	Ser	Gly	Pro	Gly	Ala	Tyr	Glu	Ser	Gly	Ile	Met	Val	Ser	Lys
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Ala	Val	Glu	Ile	Tyr	Ile	Gln	Gly	Lys	Leu	Leu	Lys	Pro	Ala	Val	Val
785					790					795					800
Gly	Ile	Lys	Ile	Asp	Val	Asn	Ser	Trp	Ile	Glu	Asn	Phe	Thr	Lys	Thr
				805					810					815	
Ser	Ile	Arg	Asp	Pro	Cys	Ala	Gly	Pro	Val	Cys	Asp	Cys	Lys	Arg	Asn
			820					825					830		
Ser	Asp	Val	Met	Asp	Cys	Val	Ile	Leu	Asp	Asp	Gly	Gly	Phe	Leu	Leu
		835					840					845			
Met	Ala	Asn	His	Asp	Asp	Tyr	Thr	Asn	Gln	Ile	Gly	Arg	Phe	Phe	Gly

850	855	860
Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr		
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Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala		
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Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Val		
	900	905 910
Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser		
	915	920 925
Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu		
	930	935 940
Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln		
945	950	955 960
Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys		
	965	970 975
Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His		
	980	985 990
Gly Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser		
	995	1000 1005
Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln		
1010	1015	1020
Thr Ser Asp Gly Pro Asn Pro Cys Asp Met Val Lys Gln Pro Arg Tyr		
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Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Val Leu Glu Asp Tyr		
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Thr Asp Cys Gly Gly Val Ser		
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<211> 1091

<212> PRT

<213> Homo sapiens

<400> 44

Met	Ala	Ala	Gly	Cys	Leu	Leu	Ala	Leu	Thr	Leu	Thr	Leu	Phe	Gln	Ser	1	5	10	15
Leu	Leu	Ile	Gly	Pro	Ser	Ser	Glu	Glu	Pro	Phe	Pro	Ser	Ala	Val	Thr	20	25	30	
Ile	Lys	Ser	Trp	Val	Asp	Lys	Met	Gln	Glu	Asp	Leu	Val	Thr	Leu	Ala	35	40	45	
Lys	Thr	Ala	Ser	Gly	Val	Asn	Gln	Leu	Val	Asp	Ile	Tyr	Glu	Lys	Tyr	50	55	60	
Gln	Asp	Leu	Tyr	Thr	Val	Glu	Pro	Asn	Asn	Ala	Arg	Gln	Leu	Val	Glu	65	70	75	80
Ile	Ala	Ala	Arg	Asp	Ile	Glu	Lys	Leu	Leu	Ser	Asn	Arg	Ser	Lys	Ala	85	90	95	
Leu	Val	Ser	Leu	Ala	Leu	Glu	Ala	Glu	Lys	Val	Gln	Ala	Ala	His	Gln	100	105	110	
Trp	Arg	Glu	Asp	Phe	Ala	Ser	Asn	Glu	Val	Val	Tyr	Tyr	Asn	Ala	Lys	115	120	125	
Asp	Asp	Leu	Asp	Pro	Glu	Lys	Asn	Asp	Ser	Glu	Pro	Gly	Ser	Gln	Arg	130	135	140	
Ile	Lys	Pro	Val	Phe	Ile	Glu	Asp	Ala	Asn	Phe	Gly	Arg	Gln	Ile	Ser	145	150	155	160
Tyr	Gln	His	Ala	Ala	Val	His	Ile	Pro	Thr	Asp	Ile	Tyr	Glu	Gly	Ser	165	170	175	
Thr	Ile	Val	Leu	Asn	Glu	Leu	Asn	Trp	Thr	Ser	Ala	Leu	Asp	Glu	Val	180	185	190	
Phe	Lys	Lys	Asn	Arg	Glu	Glu	Asp	Pro	Ser	Leu	Leu	Trp	Gln	Val	Phe	195	200	205	
Gly	Ser	Ala	Thr	Gly	Leu	Ala	Arg	Tyr	Tyr	Pro	Ala	Ser	Pro	Trp	Val	210	215	220	
Asp	Asn	Ser	Arg	Thr	Pro	Asn	Lys	Ile	Asp	Leu	Tyr	Asp	Val	Arg	Arg	225	230	235	240
Arg	Pro	Trp	Tyr	Ile	Gln	Gly	Ala	Ala	Ser	Pro	Lys	Asp	Met	Leu	Ile	245	250	255	

Leu Val Asp Val Ser Gly Ser Val Ser Gly Leu Thr Leu Lys Leu Ile
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Arg Thr Ser Val Ser Glu Met Leu Glu Thr Leu Ser Asp Asp Asp Phe
 275 280 285

Val Asn Val Ala Ser Phe Asn Ser Asn Ala Gln Asp Val Ser Cys Phe
 290 295 300

Gln His Leu Val Gln Ala Asn Val Arg Asn Lys Lys Val Leu Lys Asp
 305 310 315 320

Ala Val Asn Asn Ile Thr Ala Lys Gly Ile Thr Asp Tyr Lys Lys Gly
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Phe Ser Phe Ala Phe Glu Gln Leu Leu Asn Tyr Asn Val Ser Arg Ala
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Asn Cys Asn Lys Ile Ile Met Leu Phe Thr Asp Gly Gly Glu Glu Arg
 355 360 365

Ala Gln Glu Ile Phe Asn Lys Tyr Asn Lys Asp Lys Lys Val Arg Val
 370 375 380

Phe Arg Phe Ser Val Gly Gln His Asn Tyr Glu Arg Gly Pro Ile Gln
 385 390 395 400

Trp Met Ala Cys Glu Asn Lys Gly Tyr Tyr Tyr Glu Ile Pro Ser Ile
 405 410 415

Gly Ala Ile Arg Ile Asn Thr Gln Glu Tyr Leu Asp Val Leu Gly Arg
 420 425 430

Pro Met Val Leu Ala Gly Asp Lys Ala Lys Gln Val Gln Trp Thr Asn
 435 440 445

Val Tyr Leu Asp Ala Leu Glu Leu Gly Leu Val Ile Thr Gly Thr Leu
 450 455 460

Pro Val Phe Asn Ile Thr Gly Gln Phe Glu Asn Lys Thr Asn Leu Lys
 465 470 475 480

Asn Gln Leu Ile Leu Gly Val Met Gly Val Asp Val Ser Leu Glu Asp
 485 490 495

Ile Lys Arg Leu Thr Pro Arg Phe Thr Leu Cys Pro Asn Gly Tyr Tyr
 500 505 510

Phe	Ala	Ile	Asp	Pro	Asn	Gly	Tyr	Val	Leu	Leu	His	Pro	Asn	Leu	Gln	515	520	525
Pro	Lys	Asn	Pro	Lys	Ser	Gln	Glu	Pro	Val	Thr	Leu	Asp	Phe	Leu	Asp	530	535	540
Ala	Glu	Leu	Glu	Asn	Asp	Ile	Lys	Val	Glu	Ile	Arg	Asn	Lys	Met	Ile	545	550	555
Asp	Gly	Glu	Ser	Gly	Glu	Lys	Thr	Phe	Arg	Thr	Leu	Val	Lys	Ser	Gln	565	570	575
Asp	Glu	Arg	Tyr	Ile	Asp	Lys	Gly	Asn	Arg	Thr	Tyr	Thr	Trp	Thr	Pro	580	585	590
Val	Asn	Gly	Thr	Asp	Tyr	Ser	Leu	Ala	Leu	Val	Leu	Pro	Thr	Tyr	Ser	595	600	605
Phe	Tyr	Tyr	Ile	Lys	Ala	Lys	Leu	Glu	Glu	Thr	Ile	Thr	Gln	Ala	Arg	610	615	620
Ser	Lys	Lys	Gly	Lys	Met	Lys	Asp	Ser	Glu	Thr	Leu	Lys	Pro	Asp	Asn	625	630	635
Phe	Glu	Glu	Ser	Gly	Tyr	Thr	Phe	Ile	Ala	Pro	Arg	Asp	Tyr	Cys	Asn	645	650	655
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Glu	Phe	Ile	Asp	Arg	Lys	Thr	Pro	Asn	Asn	Pro	Ser	Cys	Asn	Ala	Asp	675	680	685
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Gln	Asn	Tyr	Trp	Ser	Lys	Gln	Lys	Asn	Ile	Lys	Gly	Val	Lys	Ala	Arg	705	710	715
Phe	Val	Val	Thr	Asp	Gly	Gly	Ile	Thr	Arg	Val	Tyr	Pro	Lys	Glu	Ala	725	730	735
Gly	Glu	Asn	Trp	Gln	Glu	Asn	Pro	Glu	Thr	Tyr	Glu	Asp	Ser	Phe	Tyr	740	745	750
Lys	Arg	Ser	Leu	Asp	Asn	Asp	Asn	Tyr	Val	Phe	Thr	Ala	Pro	Tyr	Phe	755	760	765

Asn Lys Ser Gly Pro Gly Ala Tyr Glu Ser Gly Ile Met Val Ser Lys
 770 775 780

Ala Val Glu Ile Tyr Ile Gln Gly Lys Leu Leu Lys Pro Ala Val Val
 785 790 795 800

Gly Ile Lys Ile Asp Val Asn Ser Trp Ile Glu Asn Phe Thr Lys Thr
 805 810 815

Ser Ile Arg Asp Pro Cys Ala Gly Pro Val Cys Asp Cys Lys Arg Asn
 820 825 830

Ser Asp Val Met Asp Cys Val Ile Leu Asp Asp Gly Gly Phe Leu Leu
 835 840 845

Met Ala Asn His Asp Asp Tyr Thr Asn Gln Ile Gly Arg Phe Phe Gly
 850 855 860

Glu Ile Asp Pro Ser Leu Met Arg His Leu Val Asn Ile Ser Val Tyr
 865 870 875 880

Ala Phe Asn Lys Ser Tyr Asp Tyr Gln Ser Val Cys Glu Pro Gly Ala
 885 890 895

Ala Pro Lys Gln Gly Ala Gly His Arg Ser Ala Tyr Val Pro Ser Val
 900 905 910

Ala Asp Ile Leu Gln Ile Gly Trp Trp Ala Thr Ala Ala Ala Trp Ser
 915 920 925

Ile Leu Gln Gln Phe Leu Leu Ser Leu Thr Phe Pro Arg Leu Leu Glu
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Ala Val Glu Met Glu Asp Asp Asp Phe Thr Ala Ser Leu Ser Lys Gln
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Ser Cys Ile Thr Glu Gln Thr Gln Tyr Phe Phe Asp Asn Asp Ser Lys
 965 970 975

Ser Phe Ser Gly Val Leu Asp Cys Gly Asn Cys Ser Arg Ile Phe His
 980 985 990

Gly Glu Lys Leu Met Asn Thr Asn Leu Ile Phe Ile Met Val Glu Ser
 995 1000 1005

Lys Gly Thr Cys Pro Cys Asp Thr Arg Leu Leu Ile Gln Ala Glu Gln
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Thr Ser Asp Gly Pro Asn Pro Cys Asp Met Val Lys Gln Pro Arg Tyr
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Arg Lys Gly Pro Asp Val Cys Phe Asp Asn Asn Val Leu Glu Asp Tyr
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Thr Asp Cys Gly Gly Val Ser Gly Leu Asn Pro Ser Leu Trp Tyr Ile
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Ile Gly Ile Gln Phe Leu Leu Leu Trp Leu Val Ser Gly Ser Thr His
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Arg Leu Leu
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 <213> Homo sapiens

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer

<400> 46

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21

<210> 47
<211> 21
<212> DNA
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<220>
<223> Description of Artificial Sequence: primer

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<210> 48
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

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<210> 49
<211> 52
<212> DNA
<213> Artificial Sequence

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<213> Homo sapiens

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 <213> Homo sapiens

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<210> 52

<211> 3339

<212> DNA

<213> Homo sapiens

<400> 52

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<210> 53

<211> 1050

<212> PRT

<213> Homo sapiens

<400> 53

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Trp Ile Pro Leu Gln Pro Met Pro Val Ala Trp Ala Phe Val Gln Lys
      20             25            30

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```

Thr Ser Ala Leu Leu Trp Leu Leu Leu Leu Gly Thr Ser Leu Ser Pro
    35             40            45

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Ala Trp Gly Gln Ala Lys Ile Pro Leu Glu Thr Val Lys Leu Trp Ala

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Ser	Leu	Leu	Leu	Gln	Lys	Lys	Tyr	Lys	Asp	Val	Glu	Ser	Ser	Leu	Lys
				85					90					95	
Ile	Glu	Glu	Val	Asp	Gly	Leu	Glu	Leu	Val	Arg	Lys	Phe	Ser	Glu	Asp
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Met	Glu	Asn	Met	Leu	Arg	Arg	Lys	Val	Glu	Ala	Val	Gln	Asn	Leu	Val
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Glu	Ala	Ala	Glu	Glu	Ala	Asp	Leu	Asn	His	Glu	Phe	Asn	Glu	Ser	Leu
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Gly	Asn	Phe	Val	Glu	Leu	Gly	Ala	Glu	Phe	Leu	Leu	Glu	Ser	Asn	Ala
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His	Phe	Ser	Asn	Leu	Pro	Val	Asn	Thr	Ser	Ile	Ser	Ser	Val	Gln	Leu
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Lys	Asp	Ile	Val	Ile	Leu	Val	Asp	Val	Ser	Gly	Ser	Met	Lys	Gly	Leu
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Arg	Met	Thr	Ile	Ala	Lys	His	Thr	Ile	Thr	Thr	Ile	Leu	Asp	Thr	Leu
	290					295					300				
Gly	Glu	Asn	Asp	Phe	Val	Asn	Ile	Ile	Ala	Tyr	Asn	Asp	Tyr	Val	His

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Tyr Ile Glu Pro Cys Phe Lys Gly Ile Leu Val Gln Ala Asp Arg Asp						
	325		330			335
Asn Arg Glu His Phe Lys Leu Leu Val Glu Glu Leu Met Val Lys Gly						
	340		345			350
Val Gly Val Val Asp Gln Ala Leu Arg Glu Ala Phe Gln Ile Leu Lys						
	355		360			365
Gln Phe Gln Glu Ala Lys Gln Gly Ser Leu Cys Asn Gln Ala Ile Met						
	370		375			380
Leu Ile Ser Asp Gly Ala Val Glu Asp Tyr Glu Pro Val Phe Glu Lys						
385		390		395		400
Tyr Asn Trp Pro Asp Cys Lys Val Arg Val Phe Thr Tyr Leu Ile Gly						
	405		410			415
Arg Glu Val Ser Phe Ala Asp Arg Met Lys Trp Ile Ala Cys Asn Asn						
	420		425			430
Lys Gly Tyr Tyr Thr Gln Ile Ser Thr Leu Ala Asp Thr Gln Glu Asn						
	435		440			445
Val Met Glu Tyr Leu His Val Leu Ser Arg Pro Met Val Ile Asn His						
	450		455			460
Asp His Asp Ile Ile Trp Thr Glu Ala Tyr Met Asp Ser Lys Leu Leu						
465		470		475		480
Ser Ser Gln Ala Gln Ser Leu Thr Leu Leu Thr Thr Val Ala Met Pro						
	485		490			495
Val Phe Ser Lys Lys Asn Glu Thr Arg Ser His Gly Ile Leu Leu Gly						
	500		505			510
Val Val Gly Ser Asp Val Ala Leu Arg Glu Leu Met Lys Leu Ala Pro						
	515		520			525
Arg Tyr Lys Leu Gly Val His Gly Tyr Ala Phe Leu Asn Thr Asn Asn						
	530		535			540
Gly Tyr Ile Leu Ser His Pro Asp Leu Arg Pro Leu Tyr Arg Glu Gly						
545		550		555		560
Lys Lys Leu Lys Pro Lys Pro Asn Tyr Asn Ser Val Asp Leu Ser Glu						

565										570					575						
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Arg	Glu	Thr	Gly	Thr	Leu	Ser	Met	Asp	Val	Lys	Val	Pro	Met	Asp	Lys						
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Gly	Lys	Arg	Val	Leu	Phe	Leu	Thr	Asn	Asp	Tyr	Phe	Phe	Thr	Asp	Ile						
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Ser	Asp	Thr	Pro	Phe	Ser	Leu	Gly	Val	Val	Leu	Ser	Arg	Gly	His	Gly						
625					630					635					640						
Glu	Tyr	Ile	Leu	Leu	Gly	Asn	Thr	Ser	Val	Glu	Glu	Gly	Leu	His	Asp						
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Ile	Arg	Phe	Leu	Thr	Arg	Lys	Asp	Pro	Asp	Leu	Glu	Cys	Asp	Glu	Glu						
	690					695					700										
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Ala	Tyr	Trp	Thr	Ala	Leu	Ala	Leu	Asn	Met	Ser	Glu	Glu	Ser	Glu	His						
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Pro	Glu	Asp	Glu	Ala	Ser	Val	Phe	Thr	Leu	Asp	Arg	Phe	Pro	Leu	Trp						
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Tyr	Arg	Gln	Ala	Ser	Glu	His	Pro	Ala	Gly	Ser	Phe	Val	Phe	Asn	Leu						
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Arg	Trp	Ala	Glu	Gly	Pro	Glu	Ser	Ala	Gly	Glu	Pro	Met	Val	Val	Thr						
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Trp Ala Ala Thr Arg Gln Cys Ser Thr Val Asp Gly Pro Cys Thr Gln		
850	855	860
Ser Cys Glu Asp Ser Asp Leu Asp Cys Phe Val Ile Asp Asn Asn Gly		
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Phe Ile Leu Ile Ser Lys Arg Ser Arg Glu Thr Gly Arg Phe Leu Gly		
885	890	895
Glu Val Asp Gly Ala Val Leu Thr Gln Leu Leu Ser Met Gly Val Phe		
900	905	910
Ser Gln Val Thr Met Tyr Asp Tyr Gln Ala Met Cys Lys Pro Ser Ser		
915	920	925
His His His Ser Ala Ala Gln Pro Leu Val Ser Pro Ile Ser Ala Phe		
930	935	940
Leu Thr Ala Thr Arg Trp Leu Leu Gln Glu Leu Val Leu Phe Leu Leu		
945	950	955
Glu Trp Ser Val Trp Gly Ser Trp Tyr Asp Arg Gly Ala Glu Ala Lys		
965	970	975
Ser Val Phe His His Ser His Lys His Lys Lys Gln Asp Pro Leu Gln		
980	985	990
Pro Cys Asp Thr Glu Tyr Pro Val Phe Val Tyr Gln Pro Ala Ile Arg		
995	1000	1005
Glu Ala Asn Gly Ile Val Glu Cys Gly Pro Cys Gln Lys Val Phe Val		
1010	1015	1020
Val Gln Gln Ile Pro Asn Ser Asn Leu Leu Leu Leu Val Thr Asp Pro		
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1045	1050	

<210> 54
 <211> 1069
 <212> PRT

<213> Homo sapiens

<400> 54

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			20					25					30		
Thr	Ser	Ala	Leu	Leu	Trp	Leu	Leu	Leu	Gly	Thr	Ser	Leu	Ser	Pro	
		35					40				45				
Ala	Trp	Gly	Gln	Ala	Lys	Ile	Pro	Leu	Glu	Thr	Val	Lys	Leu	Trp	Ala
	50					55					60				
Asp	Thr	Phe	Gly	Gly	Asp	Leu	Tyr	Asn	Thr	Val	Thr	Lys	Tyr	Ser	Gly
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Ser	Leu	Leu	Leu	Gln	Lys	Lys	Tyr	Lys	Asp	Val	Glu	Ser	Ser	Leu	Lys
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Ile	Glu	Glu	Val	Asp	Gly	Leu	Glu	Leu	Val	Arg	Lys	Phe	Ser	Glu	Asp
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Met	Glu	Asn	Met	Leu	Arg	Arg	Lys	Val	Glu	Ala	Val	Gln	Asn	Leu	Val
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Met	Ser	Glu	Ala	Leu	Asn	Ala	Val	Phe	Val	Glu	Asn	Phe	Gln	Arg	Asp
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Pro	Thr	Leu	Thr	Trp	Gln	Tyr	Phe	Gly	Ser	Ala	Thr	Gly	Phe	Phe	Arg
225					230					235					240

Ile Tyr Pro Gly Ile Lys Trp Thr Pro Asp Glu Asn Gly Val Ile Thr	245	250	255
Phe Asp Cys Arg Asn Arg Gly Trp Tyr Ile Gln Ala Ala Thr Ser Pro	260	265	270
Lys Asp Ile Val Ile Leu Val Asp Val Ser Gly Ser Met Lys Gly Leu	275	280	285
Arg Met Thr Ile Ala Lys His Thr Ile Thr Thr Ile Leu Asp Thr Leu	290	295	300
Gly Glu Asn Asp Phe Val Asn Ile Ile Ala Tyr Asn Asp Tyr Val His	305	310	315
Tyr Ile Glu Pro Cys Phe Lys Gly Ile Leu Val Gln Ala Asp Arg Asp	325	330	335
Asn Arg Glu His Phe Lys Leu Leu Val Glu Glu Leu Met Val Lys Gly	340	345	350
Val Gly Val Val Asp Gln Ala Leu Arg Glu Ala Phe Gln Ile Leu Lys	355	360	365
Gln Phe Gln Glu Ala Lys Gln Gly Ser Leu Cys Asn Gln Ala Ile Met	370	375	380
Leu Ile Ser Asp Gly Ala Val Glu Asp Tyr Glu Pro Val Phe Glu Lys	385	390	395
Tyr Asn Trp Pro Asp Cys Lys Val Arg Val Phe Thr Tyr Leu Ile Gly	405	410	415
Arg Glu Val Ser Phe Ala Asp Arg Met Lys Trp Ile Ala Cys Asn Asn	420	425	430
Lys Gly Tyr Tyr Thr Gln Ile Ser Thr Leu Ala Asp Thr Gln Glu Asn	435	440	445
Val Met Glu Tyr Leu His Val Leu Ser Arg Pro Met Val Ile Asn His	450	455	460
Asp His Asp Ile Ile Trp Thr Glu Ala Tyr Met Asp Ser Lys Leu Leu	465	470	475
Ser Ser Gln Ala Gln Ser Leu Thr Leu Leu Thr Thr Val Ala Met Pro	485	490	495

Val	Phe	Ser	Lys	Lys	Asn	Glu	Thr	Arg	Ser	His	Gly	Ile	Leu	Leu	Gly	500	505	510
Val	Val	Gly	Ser	Asp	Val	Ala	Leu	Arg	Glu	Leu	Met	Lys	Leu	Ala	Pro	515	520	525
Arg	Tyr	Lys	Leu	Gly	Val	His	Gly	Tyr	Ala	Phe	Leu	Asn	Thr	Asn	Asn	530	535	540
Gly	Tyr	Ile	Leu	Ser	His	Pro	Asp	Leu	Arg	Pro	Leu	Tyr	Arg	Glu	Gly	545	550	555
Lys	Lys	Leu	Lys	Pro	Lys	Pro	Asn	Tyr	Asn	Ser	Val	Asp	Leu	Ser	Glu	565	570	575
Val	Glu	Trp	Glu	Asp	Gln	Ala	Glu	Ser	Leu	Arg	Thr	Ala	Met	Ile	Asn	580	585	590
Arg	Glu	Thr	Gly	Thr	Leu	Ser	Met	Asp	Val	Lys	Val	Pro	Met	Asp	Lys	595	600	605
Gly	Lys	Arg	Val	Leu	Phe	Leu	Thr	Asn	Asp	Tyr	Phe	Phe	Thr	Asp	Ile	610	615	620
Ser	Asp	Thr	Pro	Phe	Ser	Leu	Gly	Val	Val	Leu	Ser	Arg	Gly	His	Gly	625	630	635
Glu	Tyr	Ile	Leu	Leu	Gly	Asn	Thr	Ser	Val	Glu	Glu	Gly	Leu	His	Asp	645	650	655
Leu	Leu	His	Pro	Asp	Leu	Ala	Leu	Ala	Gly	Asp	Trp	Ile	Tyr	Cys	Ile	660	665	670
Thr	Asp	Ile	Asp	Pro	Asp	His	Arg	Lys	Leu	Ser	Gln	Leu	Glu	Ala	Met	675	680	685
Ile	Arg	Phe	Leu	Thr	Arg	Lys	Asp	Pro	Asp	Leu	Glu	Cys	Asp	Glu	Glu	690	695	700
Leu	Val	Arg	Glu	Val	Leu	Phe	Asp	Ala	Val	Val	Thr	Ala	Pro	Met	Glu	705	710	715
Ala	Tyr	Trp	Thr	Ala	Leu	Ala	Leu	Asn	Met	Ser	Glu	Glu	Ser	Glu	His	725	730	735
Val	Val	Asp	Met	Ala	Phe	Leu	Gly	Thr	Arg	Ala	Gly	Leu	Leu	Arg	Ser	740	745	750

Ser	Leu	Phe	Val	Gly	Ser	Glu	Lys	Val	Ser	Asp	Arg	Lys	Phe	Leu	Thr	755	760	765	
Pro	Glu	Asp	Glu	Ala	Ser	Val	Phe	Thr	Leu	Asp	Arg	Phe	Pro	Leu	Trp	770	775	780	
Tyr	Arg	Gln	Ala	Ser	Glu	His	Pro	Ala	Gly	Ser	Phe	Val	Phe	Asn	Leu	785	790	795	800
Arg	Trp	Ala	Glu	Gly	Pro	Glu	Ser	Ala	Gly	Glu	Pro	Met	Val	Val	Thr	805	810	815	
Ala	Ser	Thr	Ala	Val	Ala	Val	Thr	Val	Asp	Lys	Arg	Thr	Ala	Ile	Ala	820	825	830	
Ala	Ala	Ala	Gly	Val	Gln	Met	Lys	Leu	Glu	Phe	Leu	Gln	Arg	Lys	Phe	835	840	845	
Trp	Ala	Ala	Thr	Arg	Gln	Cys	Ser	Thr	Val	Asp	Gly	Pro	Cys	Thr	Gln	850	855	860	
Ser	Cys	Glu	Asp	Ser	Asp	Leu	Asp	Cys	Phe	Val	Ile	Asp	Asn	Asn	Gly	865	870	875	880
Phe	Ile	Leu	Ile	Ser	Lys	Arg	Ser	Arg	Glu	Thr	Gly	Arg	Phe	Leu	Gly	885	890	895	
Glu	Val	Asp	Gly	Ala	Val	Leu	Thr	Gln	Leu	Leu	Ser	Met	Gly	Val	Phe	900	905	910	
Ser	Gln	Val	Thr	Met	Tyr	Asp	Tyr	Gln	Ala	Met	Cys	Lys	Pro	Ser	Ser	915	920	925	
His	His	His	Ser	Ala	Ala	Gln	Pro	Leu	Val	Ser	Pro	Ile	Ser	Ala	Phe	930	935	940	
Leu	Thr	Ala	Thr	Arg	Trp	Leu	Leu	Gln	Glu	Leu	Val	Leu	Phe	Leu	Leu	945	950	955	960
Glu	Trp	Ser	Val	Trp	Gly	Ser	Trp	Tyr	Asp	Arg	Gly	Ala	Glu	Ala	Lys	965	970	975	
Ser	Val	Phe	His	His	Ser	His	Lys	His	Lys	Lys	Gln	Asp	Pro	Leu	Gln	980	985	990	
Pro	Cys	Asp	Thr	Glu	Tyr	Pro	Val	Phe	Val	Tyr	Gln	Pro	Ala	Ile	Arg	995	1000	1005	

Glu Ala Asn Gly Ile Val Glu Cys Gly Pro Cys Gln Lys Val Phe Val
 1010 1015 1020

Val Gln Gln Ile Pro Asn Ser Asn Leu Leu Leu Leu Val Thr Asp Pro
 1025 1030 1035 1040

Thr Cys Asp Cys Ser Ile Phe Pro Pro Val Leu Gln Glu Ala Thr Glu
 1045 1050 1055

Val Lys Tyr Asn Ala Ser Val Lys Cys Asp Arg Met Arg
 1060 1065

<210> 55

<211> 1097

<212> PRT

<213> Homo sapiens

<400> 55

Met Pro Ala Thr Pro Asn Phe Leu Ala Asn Pro Ser Ser Ser Ser Arg
 1 5 10 15

Trp Ile Pro Leu Gln Pro Met Pro Val Ala Trp Ala Phe Val Gln Lys
 20 25 30

Thr Ser Ala Leu Leu Trp Leu Leu Leu Leu Gly Thr Ser Leu Ser Pro
 35 40 45

Ala Trp Gly Gln Ala Lys Ile Pro Leu Glu Thr Val Lys Leu Trp Ala
 50 55 60

Asp Thr Phe Gly Gly Asp Leu Tyr Asn Thr Val Thr Lys Tyr Ser Gly
 65 70 75 80

Ser Leu Leu Leu Gln Lys Lys Tyr Lys Asp Val Glu Ser Ser Leu Lys
 85 90 95

Ile Glu Glu Val Asp Gly Leu Glu Leu Val Arg Lys Phe Ser Glu Asp
 100 105 110

Met Glu Asn Met Leu Arg Arg Lys Val Glu Ala Val Gln Asn Leu Val
 115 120 125

Glu Ala Ala Glu Glu Ala Asp Leu Asn His Glu Phe Asn Glu Ser Leu
 130 135 140

Val Phe Asp Tyr Tyr Asn Ser Val Leu Ile Asn Glu Arg Asp Glu Lys
 145 150 155 160

Gly Asn Phe Val Glu Leu Gly Ala Glu Phe Leu Leu Glu Ser Asn Ala
 165 170 175

His Phe Ser Asn Leu Pro Val Asn Thr Ser Ile Ser Ser Val Gln Leu
 180 185 190

Pro Thr Asn Val Tyr Asn Lys Asp Pro Asp Ile Leu Asn Gly Val Tyr
 195 200 205

Met Ser Glu Ala Leu Asn Ala Val Phe Val Glu Asn Phe Gln Arg Asp
 210 215 220

Pro Thr Leu Thr Trp Gln Tyr Phe Gly Ser Ala Thr Gly Phe Phe Arg
 225 230 235 240

Ile Tyr Pro Gly Ile Lys Trp Thr Pro Asp Glu Asn Gly Val Ile Thr
 245 250 255

Phe Asp Cys Arg Asn Arg Gly Trp Tyr Ile Gln Ala Ala Thr Ser Pro
 260 265 270

Lys Asp Ile Val Ile Leu Val Asp Val Ser Gly Ser Met Lys Gly Leu
 275 280 285

Arg Met Thr Ile Ala Lys His Thr Ile Thr Thr Ile Leu Asp Thr Leu
 290 295 300

Gly Glu Asn Asp Phe Val Asn Ile Ile Ala Tyr Asn Asp Tyr Val His
 305 310 315 320

Tyr Ile Glu Pro Cys Phe Lys Gly Ile Leu Val Gln Ala Asp Arg Asp
 325 330 335

Asn Arg Glu His Phe Lys Leu Leu Val Glu Glu Leu Met Val Lys Gly
 340 345 350

Val Gly Val Val Asp Gln Ala Leu Arg Glu Ala Phe Gln Ile Leu Lys
 355 360 365

Gln Phe Gln Glu Ala Lys Gln Gly Ser Leu Cys Asn Gln Ala Ile Met
 370 375 380

Leu Ile Ser Asp Gly Ala Val Glu Asp Tyr Glu Pro Val Phe Glu Lys
 385 390 395 400

Tyr Asn Trp Pro Asp Cys Lys Val Arg Val Phe Thr Tyr Leu Ile Gly
 405 410 415

Arg Glu Val Ser Phe Ala Asp Arg Met Lys Trp Ile Ala Cys Asn Asn
 420 425 430

Lys Gly Tyr Tyr Thr Gln Ile Ser Thr Leu Ala Asp Thr Gln Glu Asn
 435 440 445

Val Met Glu Tyr Leu His Val Leu Ser Arg Pro Met Val Ile Asn His
 450 455 460

Asp His Asp Ile Ile Trp Thr Glu Ala Tyr Met Asp Ser Lys Leu Leu
 465 470 475 480

Ser Ser Gln Ala Gln Ser Leu Thr Leu Thr Thr Val Ala Met Pro
 485 490 495

Val Phe Ser Lys Lys Asn Glu Thr Arg Ser His Gly Ile Leu Leu Gly
 500 505 510

Val Val Gly Ser Asp Val Ala Leu Arg Glu Leu Met Lys Leu Ala Pro
 515 520 525

Arg Tyr Lys Leu Gly Val His Gly Tyr Ala Phe Leu Asn Thr Asn Asn
 530 535 540

Gly Tyr Ile Leu Ser His Pro Asp Leu Arg Pro Leu Tyr Arg Glu Gly
 545 550 555 560

Lys Lys Leu Lys Pro Lys Pro Asn Tyr Asn Ser Val Asp Leu Ser Glu
 565 570 575

Val Glu Trp Glu Asp Gln Ala Glu Ser Leu Arg Thr Ala Met Ile Asn
 580 585 590

Arg Glu Thr Gly Thr Leu Ser Met Asp Val Lys Val Pro Met Asp Lys
 595 600 605

Gly Lys Arg Val Leu Phe Leu Thr Asn Asp Tyr Phe Phe Thr Asp Ile
 610 615 620

Ser Asp Thr Pro Phe Ser Leu Gly Val Val Leu Ser Arg Gly His Gly
 625 630 635 640

Glu Tyr Ile Leu Leu Gly Asn Thr Ser Val Glu Glu Gly Leu His Asp
 645 650 655

Leu Leu His Pro Asp Leu Ala Leu Ala Gly Asp Trp Ile Tyr Cys Ile
 660 665 670

Ser His His His Ser Ala Ala Gln Pro Leu Val Ser Pro Ile Ser Ala
 930 935 940

Phe Leu Thr Ala Thr Arg Trp Leu Leu Gln Glu Leu Val Leu Phe Leu
 945 950 955 960

Leu Glu Trp Ser Val Trp Gly Ser Trp Tyr Asp Arg Gly Ala Glu Ala
 965 970 975

Lys Ser Val Phe His His Ser His Lys His Lys Lys Gln Asp Pro Leu
 980 985 990

Gln Pro Cys Asp Thr Glu Tyr Pro Val Phe Val Tyr Gln Pro Ala Ile
 995 1000 1005

Arg Glu Ala Asn Gly Ile Val Glu Cys Gly Pro Cys Gln Lys Val Phe
 1010 1015 1020

Val Val Gln Gln Ile Pro Asn Ser Asn Leu Leu Leu Leu Val Thr Asp
 1025 1030 1035 1040

Pro Thr Cys Asp Cys Ser Ile Phe Pro Pro Val Leu Gln Glu Ala Thr
 1045 1050 1055

Glu Val Lys Tyr Asn Ala Ser Val Lys Cys Asp Arg Met Arg Ser Gln
 1060 1065 1070

Lys Leu Arg Arg Arg Pro Asp Ser Cys His Ala Phe His Pro Glu Glu
 1075 1080 1085

Asn Ala Gln Asp Cys Gly Gly Ala Ser
 1090 1095